A Descriptive Study of a Select Group of Learning Disabled Children: Their Family Backgrounds, Attentional Patterns and Interpersonal Styles

Kathlene R. Willing

Department of Education

Lake Erie College

Submitted in Partial Fulfillment

of the Requirements of

Master's Degree

1980

ACKNOWLEDGEMENTS

My appreciation goes out to all of the families who participated in this study. Without their co-operation, it would not have been possible.

Appreciation is also extended to the Toronto Learning Centre for allowing me to use their facilities, resources and staff. The Directors, Martin Kravitz and Merle Levine, are given special thanks for the support and guidance which was always available when it was needed. Thanks also to Lucy Goodman for aiding me in my search through the many files.

To my family, I wish to let them know I think they deserve the gold cross for patience in putting up with my absence and the ever-present tap, tap, tap of the typewriter during the arduous typing of my first draft.

My thesis committee, Barbara Heines and Connie Hollinger, are given my warmest appreciation for the patience and support they gave me while I went through the throes of interviewing and the countless hours of writing my findings.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

continued.....

LIST OF FIGURES

(continued)

ABSTRACT

This descriptive study took a select group of 20 learning disabled students who were medication-responsive and examined their family backgrounds, attentional patterns and interpersonal styles. The purpose was to search for any meaningful patterns/relationships which might exist within the families of these learning disabled subjects.

Using the Test for Attentional and Interpersonal Styles (TAIS) and a questionnaire, 94 family members, including the 20 learning disabled subjects, were interviewed. Although no strong familial patterns of import were found to exist, there were several patterns which emerged that warrant further research to clarify:

1. The learning disabled subjects of this study show very definite attentional overload patterns on the TAIS. Since the sample was small, further sampling with the general learning disabled population is recommended.

2. In the immediate families of these subjects, more mothers than fathers also had attentional overload patterns.

3. When interviewed concerning past learning problems in school, more mothers than fathers reported having

had such problems. More mothers than fathers also reported having more members from their side of the family who had had problems. The majority of these members were brothers.

4. The attentional overloads of the hypoactive subjects of this study, compared to the hyperactive subjects, were more pronounced. If these patterns remain consistent in further sampling, they should cause concern, for they are very similar to those of psychiatric patients.

5. A rather high incidence of allergies in the subjects of this study was found to exist (70%, compared to 20% for the normal population). In 90% of these subjects' families, other members also had allergies. More mothers than fathers reported having an allergy; also, more mothers than fathers reported having other members on their side of the family with allergies.

6. The medication-responsive subjects of this study are a heterogeneous group. Differences in the attentional patterns according to age, sex and activity levels were found to exist.

A Descriptive Study of a Select Group of Learning Disabled Children: Their Family Backgrounds, Attentional Patterns and Interpersonal Styles

INTRODUCTION

Statement of the Problem

Numbers of children experiencing difficulty in school are neither brain damaged, mentally retarded, nor physically handicapped. Most possess average or even above average intelligence and may be quite capable verbally. However, for some obscure reasons, they have problems in learning, as well as coping with school situations. These problems often spill into their home and social life. They are impulsive in making decisions, compulsive in their actions, lacking organized and logical thinking (dyslogic), and are generally difficult to deal with (Wacker, 1975). These problems have received a great deal of clinical attention and research in recent years (Barkley, 1977; Lambert et al., 1976; Ross & Ross, 1976).

There is much disagreement as to the etiology of these learning disabilities, and even further disagreement over whether familial or extra-familial tendencies are more significant (Cantwell, 1975; Ross & Ross, 1976). Because many of these children exhibit the

hyperactivity symptomology, much of the research has focused mainly on the effects of stimulant medication on their cognitive, behavioral, and attentional problems (Barkley & Jackson, 1977).

This narrowed focus has been considered necessary as many of the hyperactive youngsters had not been able to benefit from their educational environment, and were obvious because of their behavior. Teachers described them as having short attention spans, being difficult to reach in the sense of communications, and not being able to listen to or to follow directions articulately. In general, they were almost impossible to teach.

Some researchers feel that these children are having problems due to inappropriate levels of chemicals within the brain which provide the necessary interactions related to learning functions (Silver, 1971; Rossi, 1970). They further believe that this chemical imbalance in the neurological system causes a low energy level which in turn causes the inattention by providing insufficient connections between the sensory systems and the brain, thus leaving the child out of touch with his or her senses. The learning disabled child is seen as not being able to function in a normal receptive sense because the processes require consistency and continuity.

This chemical imbalance theory further suggests that stimulant medications bring into balance chemical homeostasis of the physiological system and allow the brain to function normally.

Debate has ensued about whether the problem of chemical imbalance is a direct result of familial tendencies transferred from generation to generation, or due to extra-familial environmental factors, or a combination of both (Ross & Ross, 1976).

Before one can begin to address the questions contained in the debate between researchers regarding familial or extra-familial tendencies and the concept of chemical imbalance, the first step should be to search for meaningful family patterns or behaviors which relate to learning disabilities.

The most commonly observed tendencies of the majority of learning disabled children seem to be those of attentional problems and inappropriate interpersonal behaviors. Therefore, a descriptive study was undertaken to determine whether these same tendencies could be found to have occurred in the families of these children with above normal frequency.

Significance of the Problem

If it were possible to find a familial tendency or pattern of behavior within a number of families

who had a learning disabled child, this would then give direction to those researchers involved in this most important problem.

Research into the families' backgrounds, attentional patterns, and interpersonal behaviors would not only benefit researchers but would aid those educators, psychologists, psychiatrists, and family counsellors who have had to deal with the emotional problems often associated with the child's learning disability when it has been allowed to go untreated for a length of time. Research could also create an awareness on the part of doctors who deal with the family as a whole, as well as pediatricians who deal with the child individually. The greatest beneficiary would be the child who could possibly be identified and treated at an earlier age, and who would therefore avoid many of the emotional problems which are compounded when diagnosis is delayed.

Limitations and Assumptions

It was beyond the scope of this study to draw any conclusions of cause and effect regarding the use of stimulant medication in treating children with learning disabilities. Nor was it within the scope of this study to search for a cause of the learning disability--either familial or extra-familial.

It was assumed that since the sample of students and their families being dealt with in this study were an intact and restricted group of subjects, rather than a fully random selection of interviewees, generalized conclusions from this sample to the larger population of learning disabled children would not be included in the scope of this study.

Any relationships that were observed would be recommended for further research.

Definitions

Distractibility: The quality of being easily distracted from a task at hand, either by visual, auditory, or internal stimuli. It incorporates the qualities of having a short attention span, the inability to concentrate for long periods of time, and the inability to complete a task once it has been begun.

Stimulant-Responsive: (According to the Toronto Learning Centre), children whose school work improved due to improved attentional behavior patterns, and whose performance in their learning tasks over a period of three months or more also improved. The improvement was assumed to be a direct result of the administration of Ritalin.

Learning Disabled: Behavioral characteristics as perceived by teachers of the children for this study

include a cluster of some or all of the following:
Hyperactivity - can't sit still, must move, restless and unsettled, fiddles constantly, talks constantly;
Hypoactivity - withdrawn, apathetic towards school, can't or won't carry on a conversation;
Distractibility - as defined above;
Inconsistent errors - both in quality of work and memory, increasing errors toward end of consistently difficult work;
Startle effect - flashes of anger or irritation when disturbed in concentration;
Difficulty in Socializing - irritates others with irrational and impulsive behavior, difficulty in maintaining eye contact.

Immediate Family: Those family members comprising the subject, mother, father, and any siblings.

Extended Family: Those family members comprising the subject's grandmother, grandfather, aunts and uncles on both sides of the family.

Attentional Overload: The inability of a person to deal effectively with his/her external and internal attentional capacities. It generally results in confused thinking or actions.

Learning Problems: Incorporates those with diagnosed learning disabilities, and those with

undiagnosed school problems associated with learning, e.g. difficulty in a basic skill.

Familial: Those tendencies which are genetic in nature.

Extra-Familial: Those tendencies which are environmental in nature.

REVIEW OF RELATED LITERATURE

Although many researchers touch upon the importance of familial and extra-familial factors, very few studies mention the incidence of learning disabilities in other members of the learning disabled child's family. Family history of parents who commented on having similar problems in school themselves is often lacking in published materials. Even though such comments have been heard by many dealing with learning disabled children, the importance or significance of the problem is generally unappreciated or peripheral to the researcher's main concerns (Rossi, 1970). It is felt that not enough investigation has been undertaken.

Because of its high profile, most studies concerning familial factors deal with the hyperactivity syndrome (Barkley & Jackson, 1977; Cantwell, 1972, 1975; Gross & Wilson, 1974; Morrison & Stewart, 1974; Rossi, 1970; Stewart & Morrison, 1970; Wunderlich, 1973). In one of Cantwell's studies on biologic and non-biologic parents of hyperactive children, he concluded that his data suggested a significant percentage of the biologic parents were "psychiatrically ill." Systematic examination of the parents revealed high prevalance rates for alcoholism, sociopathy, and hysteria. This same study also showed a high incidence for these same disorders in the biologic second-degree relatives.

A trend toward an association of hyperactivity in parent and child, as well as other members of the biologic parents' backgrounds, was also found by Morrison and Stewart (1974). They noted that hyperactivity occurred more often in biologic first and second degree relatives of the hyperactive children than those of their control group.

In an examination of research done on higher level disorders, it was noted that familial occurrences were high in the case of specific dyslexia and developmental speech disorders. It is Rossi's (1970) contention that familial factors are indeed in evidence and careful analysis of parents' abilities and disabilities should be undertaken in other areas to help predict educational handicaps.

Although Rossi (1970) strongly believes that the prime basis of learning disabilities is a familial steroid insufficiency, neither Morrison and Stewart (1974) nor Cantwell (1972) were able to distinguish whether the mode of transmission of the hyperactivity was familial or extra-familial.

Part of the problem must rest with the knowledge that hyperactive children are not a homogeneous group (Wender, 1971). If behavioral symptoms in hyperkinetic children are acknowledged to be heterogeneous, it is plausible that heterogeneity with respect to the levels

of autonomic activity also exists. In a clinical analysis of responders and non-responders to stimulant medication, Swanson and Kinsbourne (1976) show evidence that hyperactive children are in fact a heterogeneous group with regard to effective levels of medication. It is clear, then, that future investigations should include family studies of the various subgroups, e.g. stimulant-responsive, non-responsive, hyperactive vs. hypoactive, etc.

METHODOLOGY

This descriptive study took a select group of learning disabled students who had been responsive to stimulant medication and, using interview techniques, searched for similar attentional and interpersonal styles in other members of their families. Both a questionnaire and a test were utilized to elicit responses from the interviewees. The responses of the family members were analyzed for similarities to the learning disabled child's responses, and all the responses were compared across the family lines for similarities.

Subjects

Twenty subjects participated in the study. They were all enrolled as students of the Toronto Learning Centre during the years 1976-77 and/or 1977-78. They were randomly selected from a list of 97 students out of a possible 120 who met the following criteria:

1. Biologic children of the parents;
2. Average or above average intelligence as measured by the Peabody Picture Vocabulary Test;
3. No known or measurable physiological or neurological cause of the learning disability;
4. Responsive to stimulant medication; and
5. Socio-economic status of middle and upper income groups.

The subjects were all Canadian-born and ranged in age from 10 years 4 months (10.4) to 22 years 9 months (22.9). Their mean age was 15.10 years. There were 16 males and 4 females. Eleven males were considered to be mildly hyperactive or hyperactive and five were considered hypoactive. The females were evenly divided: two were hyperactive and two were hypoactive.

Of the total group, 14 had either failed or repeated a grade or subject(s); 17 had received previous special help in the form of tutoring, special education, or private schooling; and 19 had had previous psychological evaluations either by private clinics or their school boards.

A search of their past school records revealed that the ten most common complaints noted by teachers about all of the students, whether they were hyperactive or hypoactive, were:

1. Poor concentration;
2. Easily distracted;
3. Inconsistent memory;
4. Daydreaming;
5. Short attention span;
6. Inattentive;
7. Poor self confidence or self image;

8. Excitable
9. Wanting or needing constant attention; and
10. Oversensitive.

A search of their health records showed that 14 out of the 20 students had a history of allergies.

In addition to the 20 subjects, 74 family members who were available were interviewed. This group included 39 parents (20 mothers and 19 fathers), and 35 siblings (20 sisters and 15 brothers). The fathers' mean age was 48.7 years, mothers' 46.4, brothers' 19.0, and sisters' 17.3.

Four people from three different families were unavailable for interviewing--a father from one family, two brothers from another family, and a sister from a third family. The largest family group consisted of eight members, of which only seven were interviewed. The smallest family group consisted of three members. There were two families in which the subject was an only child. Average family size was 4.7 members, and the average number of children in each family was 2.75.

Instrumentation

Instruments chosen to gather data were an informal questionnaire (see Appendix A), and a more formal standardized test, the Test for Attentional and

Interpersonal Styles (TAIS) (see Appendix B).

Questionnaire. Although more difficult to tabulate, the questionnaire was designed as an open ended instrument. Because of the length and impersonal nature of the TAIS, it was felt imperative by the interviewer to develop trust and rapport with the interviewees and to allow some freedom of expression. The general line of questioning covered all of the questions with the parents, whereas with the siblings and subjects it was considered not necessary to cover all the questions.

Test of Attentional and Interpersonal Skills. The TAIS was chosen for its ability to predict performance with a reasonable degree of statistical accuracy. Psychology has long recognized the importance of the knowledge of an individual's attentional processes in understanding and predicting a person's performance. A very important variable in performance is the ability to direct and control one's attention.

The TAIS was designed not only to predict performance and to measure those processes which are critical determinants of a person's decision making abilities, but also to identify groups of individuals who tend to fall apart under stress, since anxiety levels are related to particular strengths and weaknesses. It is known that the performance of learning

disabled children is often related to their anxiety levels. The TAIS items are behaviorally anchored, and predictable relationships between attentional processes and the anxiety levels which are measured can be shown visually on a profile sheet. The test has also been shown to be useful with individuals as young as 15 years of age. To accomodate those students and siblings under 15, procedures for administration of the test were changed. This is outlined in the procedures section.

The TAIS is divided into 17 scales, categorized into three major areas: attentional, control, and interpersonal. Table 1 lists the 17 scales. The first six scales are associated with how effective individuals are in controlling both the width and direction of their attention. The next two scales reflect the amount of control they exert over their own behavior. The last scales also provide information as to how a person is likely to be perceived by others.

The effective use of attention is reflected in three attentional scales (BET, BIT, and NAR). The higher the scores are, the busier the person's perception of internal and external environments and the narrower the attentional focus when the environment demands it. An indication of inappropriate

TABLE 1

The Test of Attentional and
Interpersonal Style Scales

BET (Broad external attention): High scores on this scale are obtained by individuals who describe themselves as being able to effectively integrate many environmental stimuli at one time.

OET (External overload): The higher the score, the more mistakes due to being confused and overloaded by environmental information.

BIT (Broad internal attentional focus): High scorers see themselves as effectively integrating ideas and information from several different areas, and as being analytical.

OIT (Internal overload): The higher the score, the more mistakes individuals make because they think about too many things at once.

NAR (Narrow attention): The higher the score, the more effective individuals see themselves in terms of ability to narrow attention (e.g. to study or read a book).

RED (Reduced attention): A high score indicates individuals who make mistakes because they narrow attention too much, failing to include all of the task-relevant information.

continued.....

TABLE 1

(continued)

INFP (Information processing): High scorers think a lot and process a great deal of information.

BCON (Behavior control): A high score indicates a tendency to be impulsive and/or to engage in behavior that could be antisocial.

CON (Control): A high score indicates the individual who sees him/herself as being in, and needing, control over most interpersonal situations.

SES (Self esteem): The higher the score, the more positive the self image.

P/O (Physical orientation): High scores indicate the person participates in, and enjoys, competitive athletics and physical activity.

OBS (Obsessive): High scores indicate a tendency to ruminate and worry about one particular thing without any resolution or movement.

EXT (Extroversion): Individuals who score high are warm, outgoing, need to be with other people, and tend to be the life of the party.

INT (Introversion): High scores indicate the person who enjoys being alone with thoughts and ideas.

IEX (Intellectual expression): A high score indicates the person who expresses thoughts and ideas to other people.

continued.....

TABLE 1

(continued)

NAE (Negative affect expression): High scores are associated with a tendency to express anger and negative feelings to others.

PAE (Positive affect expression): A high score indicates a person who expresses feelings of affection to others in both physical and verbal ways.

Note: From the Manual for Test of Attentional and Interpersonal Styles, Robert N. Nideffer, Ph.D., University of Rochester. Copyright 1974 by (the copyright holder). Reprinted by permission.

attentional focus which is inflexible and overloaded is a high score in any of the other three attentional scales (OET, OIT, and RED). The attentional scales are interpreted in relation to their counterparts (BET vs. OET, BIT vs. OIT, NAR vs. RED). When the second scale of each set is higher than the first one, then an overload situation is present. These scales confirm what teachers have been observing for years in dealing with learning disabled children.

The fourth set of scales is classified as control scales. The first scale indicates how busy and complex a person perceives his/her environment to be (INFP), and the second (BCON) indicates the control a person is willing or able to exert over these perceptions. High scorers on the BCON scale tend to be impulsive and conform less to conventional standards; they are less predictable in their behavior. If they are also overloaded on the attentional scales (OET, OIT), the behavior may be due to confusion. Presumably, the overloaded person who has a less stimulating environment has nowhere else to go and would tend to get easily confused.

The style and intensity of a person's interpersonal and environmental relationships are indicated through the nine interpersonal scales. They are

believed to be important moderator variables in terms of attentional processes (McClelland, 1973). Low scorers on the CON scale generally will describe themselves as out of control over their attentional processes. This scale indicates the ability and need to be in control in interpersonal situations.

Self esteem is shown on the SES scale. It indicates an individual's self worth and self confidence. Self concept in education is often the key to an effective learner (Bloom, 1977). In comments regarding the learning disabled subjects of this study, a poor self image is seventh on the list of characteristics teachers noted most. Low scorers may have a greater tendency to incorporate negative feedback and become depressed.

An individual's interest and desire for active involvement in sports and proclivity for being actively involved with groups of people is indicated on the P/O scale.

High scorers on the OBS scale describe themselves as obsessive or compulsive. This scale is considered to be a predictor of academic performance, and should be used in conjunction with the BCON and attentional scales for interpretation. Those who score higher on this scale, along with a high score on the OBS scale, tend to perform more poorly than low scorers.

The extroversion scale (EXT) provides an indication of one's tendency to enjoy the company of other people

and to take part in group activities, whereas the introversion (INT) scale shows an individual who enjoys solitary activity. These two scales are examined in relation to their position to one another, as well as their absolute values.

The tendency to be intellectually expressive is indicated in the IEX scale. Low scorers generally need to reflect back or verbalize important instructions in order to ensure that they understand, especially if they also score high on RED and INT.

The affect scales reflect the tendency to be aware of and to express negative feelings (NAE) and positive feelings (PAE), both verbal and physical. High scorers on the NAE scale indicate a tendency to alienate others through aggressive behavior. Interpretation of the positive score in relation to the negative score is important, as great differences between them can be indicative of social isolation.

Procedure

Upon selection, the subjects' parents were sent a letter written and signed by Mr. Martin Kravitz and Mrs. Merle Levine, Directors of the Toronto Learning Centre, explaining the purposes of the study, requesting their participation, and enclosing an agreement form for

them to sign and return (see Appendix C). Two random drawings were necessary to get the needed twenty subjects. It was also noted that those who volunteered would be those who were quite interested in the findings.

Mr. Kravitz had previously signed an agreement with the investigator to proceed with the study, as the data were considered to be as important to the Centre as to the researcher (see Appendix D).

When the parents returned the agreement form, they were interviewed either at their home or at the Centre. Most parents opted for interviewing in their homes in the evening. The interview, consisting of the questionnaire and the TAIS, was handled in two stages.

The first stage began with the questionnaire. Each person was interviewed separately. Questioning began with the factual data and proceeded as outlined in the section on Instrumentation. Before completing the TAIS, they were given ten questions culled from the TAIS that were considered non-threatening. This was done in order to put the person at ease regarding the TAIS, and also to evaluate their understanding of procedures and questions on the TAIS.

The TAIS questions were recorded on cassette tape for all participants. The TAIS manual suggested that

persons with less than a grade eight reading level may experience problems in answering questions. To eliminate the reliance on reading levels and to present a uniform administration of the test, an audio-visual approach was selected. The person was instructed in the use of the tape recorder, length of the test, and procedures in filling out the answer sheet. He or she was situated in a separate location to work without distractions and was requested to answer all questions. If assistance was needed on meanings, vocabulary, or clarification of questions, they were requested to ask for it. The investigator then observed their first one or two responses to ensure an understanding of the procedures, and they were then left to complete the test alone. While they were working with the tape recorder, another family member began the interview process.

Exceptions to this procedure were made when dealing with younger children. The investigator remained available to them to assist them whenever necessary. As suggested in the manual, the first part of the test could be administered for information on the attentional processes only. Three younger siblings, due to what was considered their lack of experience, knowledge, or attentional capacities,

were given the shortened version. The younger children were generally interviewed first and the parents were left for last.

Total interview and test taking time was about one hour per person.

Analysis of Data

When all the interviews were completed, analysis of data went in two general directions. The first concerned that information which came from the questionnaire; the second dealt with the information which came from the TAIS.

Data from the questionnaires were tabulated and examined for prevalence of learning problems within the immediate and extended families and across the family groups. The general levels of education, citizenship, and occupations of families were noted. Family styles, including socio-economic status, upbringing, and closeness of family relationships, were compared and the incidence of medical allergies within and across the family groups were noted.

Data from the TAIS scores and the profile sheets were analyzed for relationships between individuals within the family. Group means for subjects, father, mother, and siblings were calculated and comparisons

made. Profile sheets were analyzed for similarity in patterns within the family, across the various sub-groups, and across the families.

Subgroup analysis included division of subjects into male vs. female, hyperactive vs. hypoactive, those under 14.11 years vs. those 15.0 years and over. It also included the division of the siblings into male vs. female, and those 14.11 years and under vs. those 15.0 years and over.

Analysis covered the attentional scales in particular, and the control and interpersonal scales as they related to the attentional scales. Intra-family patterns were noted on the self esteem, control of interpersonal behavior, and obsessiveness scales.

RESULTS

Questionnaire

Learning Problems

Individual members of the immediate and extended families who reported learning problems included: 9 mothers, 9 fathers, 10 siblings, 15 siblings on the mothers' sides, 6 siblings on the fathers' sides, 3 parents on the mothers' sides, and 1 parent on the fathers' sides. This was a ratio of 53:74 or 72%.

In looking at the immediate families as a group, Figure 1 shows 14 of the families had other family members who had learning problems. It was found that in 12 of the families, either a mother or a father reported having past difficulties. There were 6 families in which both mother and father were affected, and of these 6 families, there were 5 in which at least 1 sibling was involved.

Twelve families in the extended families reported learning problems. Eleven mothers had a brother or a sister affected and five fathers reported likewise. In the case of the parents of the mothers and fathers, it was more difficult to recollect. Many reported that for their parents who did not complete their schooling, the reason may have been economic hardship rather than

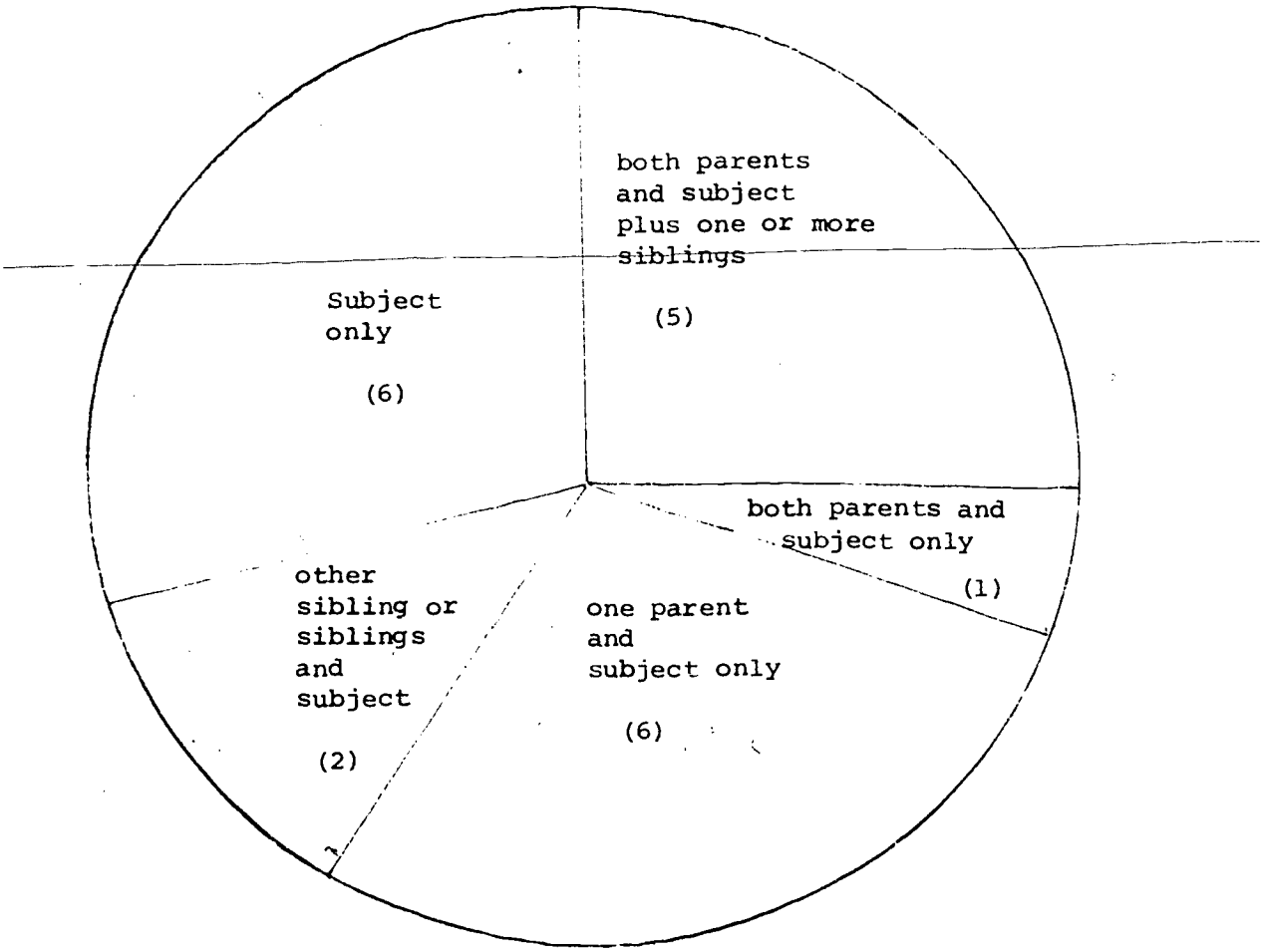


Figure 1. Immediate family members with learning problems. (20 families total)

difficulty in coping with school. Some parents were not aware of their parents' schooling due to country of origin, or it was never discussed with them. This problem of recall may also be due to selective perception. As it was, only three mothers and one father could definitely recall for certain that their parents had difficulty.

Surveying both immediate and extended families as a whole, it was found that there were 18 families in which another member or members, other than the subject, had a learning problem. In 15 cases, the mother's side of the family was involved, and in 12 cases, the father's side was. A breakdown of the involvement in the learning problems is detailed in Table 2. It shows generally more involvement from the mother's side.

Not tabulated, but interesting to mention, are comments from parents who encountered difficulty themselves, or described their brothers' or sisters' problems. Common complaints were that they were unmotivated, lazy, underachievers, were quite bright but couldn't "get their act together," or they were bored and uninterested in school. Many commented that part of their struggle was in concentrating or paying attention.

TABLE 2

Immediate and Extended Family
Involvement in
Learning Problems

Type	Number of Families	Members Involved *
No Parental Involvement	2	S
	1	S + Sib
Father's Side Only	2	S + F
Mother's Side Only	1	S + M
	1	S + M + MS
	1	S + Sib + MS
	2	S + MS
Mother and Father Involvement	2	S + M + F + Sib
Mother's and Father's Side Involvement	1	S + F + MFS
	1	S + M + MFS
	1	S + M + F + MFS
	1	S + M + F + Sib + MFS
	1	S + M + F + MS
	2	S + M + F + Sib + MS
	1	S + M + FS

* S = Subject
M = Mother
F = Father
Sib = Sibling
MS = Mother's sibling or parent
FS = Father's sibling or parent
MFS = Mother's and Father's sibling or parent

Educational Levels

The parents reported having more formal education than their parents had. Of the parents, 34 (85%) completed high school or grade 12, as compared to 26 (35%) of their parents. Seventy percent of the parents went beyond grade 12, as compared to 16% of the grandparents. Ontario schools have grade 13, and any parent who completed this grade but went no further was still considered to have gone beyond grade 12 or high school. A breakdown of the educational levels is shown in Table 3.

Some parents reported that they did not know what education their parents had attained because it was never discussed, or they could not equate the European system with the Canadian system. Again, the non-awareness of the parents may be a matter of selective perception. Whatever the case may be, the educational levels of 35% of the grandparents are unknown.

Citizenship

The majority of the students, 75%, were at least second generation Canadians on both sides of their families. Five families, 25%, had one parent that was foreign-born. Six families, 30%, were at least third generation Canadian on both sides of their families.

TABLE 3

Parents' and Grandparents'
Educational Levels

Family Member	Unknown	Less than Grade 12	Grade 12 (H.S.)	Grade 13	College some/com.	University some/com.
Mother N=20	-	4	6	1	2 / 1	2 / 4
Father N=20	-	2	5	3	1 / 2	1 / 6
Mother's Parents N=40	12	13	8	-	- / -	- / 7
Father's Parents N=40	16	13	5	-	- / 2	- / 4

TABLE 4

Countries of Origin
Subjects, Parents, and Grandparents

Country	Subjects	Parents	Grandparents
Canada	20	35	48
England		1	10
Russia		1	5
Australia		1	2
United States		1	1
Czechoslovakia		1	2
Scotland			2
Poland			6
Macedonia			2
Italy			1
Rumania			1

All the subjects were Canadian born. Countries of origin of parents and grandparents are shown on Table 4. No attempt was made to go beyond the grandparents' origins.

Occupations

Most of the parents are from the business or professional worlds. Seven of the fathers had businesses of their own; two were in real estate, two in management, two from the medical profession, and one each from sales, teaching, and law. The mothers who had worked or were working were in secretarial, real estate, management, medical, or teaching professions, and either working in the family business or running one of their own.

Socio-Economic Status

The parents generally considered themselves as better off than their parents. Sixty percent of the parents considered themselves as being upper-middle income families; thirty percent considered themselves middle income families; ten percent considered themselves well-to-do.

Thirteen families considered themselves as having an active social life. Three considered themselves as homebodies who tended to socialize

with their families. Three families noted their social life as being business oriented. One family agreed that they had very little social life.

Fifty-eight percent of the parents considered themselves as having come from a middle class or better environment. According to the 36 parents who responded, they were raised in the following: 22% working class; 20% lower middle class; 25% middle class; 25% upper middle class; and 8% from an upper class environment.

A closer look at the individual parents' social mobility showed an upward trend. Twelve fathers and ten mothers considered themselves to be in a higher socio-economic class than that in which they were raised. Six fathers and four mothers considered themselves to be at the same level. Only one father and three mothers felt that they were at a slightly lower level.

In seven families, both parents agreed that they were in a higher income class, whereas in eight families, only one of the parents considered that to be the case. Both parents in three families perceived themselves to be in the same upper-middle class environment.

The parents also considered their social life to be more active than their parents'. Of the 39

parents who commented, 14 considered their parents as having an active social life, 12 reported that their parents' social life was family oriented, and 13 reported that their parents had very little or no social life at all.

Upbringing

Parents generally perceived their upbringing as being more strict than their children viewed theirs. From 38 parents and the children of 17 families commenting, the following figures were obtained: 47% of the parents, compared to 12% of the children, considered their upbringing as strict; 22% of the parents, compared to 41% of the children, considered their upbringing as liberal or lenient; and 13% of the parents, compared to 18% of the children, considered their upbringing as balanced between the two.

Most parents and children alike felt that they had a satisfactory home life. Only four parents reported theirs as being unstable and unpredictable. The children in three families reported an unevenness in their upbringing, but it was not considered unstable or unpredictable. One subject reported that he had to "fend for himself," and two parents reported likewise.

Of all the families, seven sets of parents came from a similar upbringing; four of these were strict and three were liberal. The children from three of those sets of parents viewed their upbringing as the same--one was strict and two were liberal. The remaining families fit no pattern. Only the children from two families viewed their upbringing as the same as that of either their mother or father. The rest were viewed differently than that of either parent.

Closeness

Ten sets of parents perceived their family relationships with their parents and siblings as being close. Only one set of parents agreed that they did not come from close families. In the remaining nine familes, only one of the parents from each family--five fathers and four mothers--felt close to their parents and siblings.

The basic style of upbringing did not appear to affect the closeness of family ties, as those parents who reported not having a close relationship to their parents or siblings came from various backgrounds, including unstable, easy, and respected.

The subjects' and their siblings' perceptions of closeness to their families was quite mixed. Those children that did respond seldom agreed as to the

closeness they experienced. This may be due to the fact that they are too close to the situation and may be too young to view it objectively. Only a few of the older siblings are now living away from home. The responses from those living at home were generally more specific, e.g. "I am close to my sister." None of the responses conveyed feelings of discordance within the families.

The parents whose backgrounds were similar did not necessarily carry over that same feeling to their children. It was noted, however, that regardless of the upbringing, whether strict or whatever, the majority of the parents considered their childhood as being happy at best, or as not unhappy at worst. Only three mothers described their childhood as unhappy or one of fearfulness. None of the subjects or siblings surveyed felt that to be the case.

Personality Traits

Because of the open ended nature of the questions regarding self perceptions, the responses received were too varied to analyze without clustering into groups with similar meanings. Therefore, it was necessary to cluster the responses after the initial enumeration. The 73 responses of the subjects, given as 42 descriptions, were put into 20 clusters; the 134

responses of the siblings, given as 72 descriptions, were put into 27 clusters; the 89 responses of the fathers, given as 66 descriptions, were put into 23 clusters; and the 80 responses of the mothers, given as 56 descriptions, were put into 24 clusters.

Several clusters received only one or two responses, while others had more. Many of the respondents gave more than one self perception, and as a result made it possible to be in more than one cluster, e.g. shy but friendly.

The clusters were then tallied for the frequency of responses given by each group. Table 5 presents a breakdown of the five most common clusters and their percents of the totals.

Although not ranked the same by all respondents, all groups saw themselves in the easy-going and friendly clusters. However, fathers considered themselves more easy-going, and the siblings viewed themselves as more friendly.

The subjects were more inclined to perceive themselves as angry, frustrated people than others in the family, and mothers tended to regard themselves as more emotional. Mothers and siblings did not see themselves as shy, quiet people, but the mothers did see themselves as being more sensitive and loving than other members.

TABLE 5

Personality Traits
Immediate Family

Person	Total Clusters	% of Total	Rank	Cluster Description
Subject	20	65%	1.	easy to anger, frustrated, hard to get along with
		60%	2.	active, noisy, impulsive, on the go, talky
		55%	3.	shy, quiet, introspective, loner, analytical
		50%	4.	friendly, outgoing, open, sense of humor
		35%	5.	easy-going, calm, take things in stride
Sibling	27	89%	1.	friendly, outgoing, sense of humor, sociable
		59%	2.	easy-going, carefree, tolerant, calm, stable
		52%	3.	shy, quiet, loner
		48%	4.	active, physically active, athletic
		30%	5.	rash, short tempered, easily excited, emotional
Mother	24	54%	1.	emotional, easily upset, tense, nervous, volatile
		42%	2.	easy-going, inwardly calm, take things in stride
		33%	3.	sensitive, loving, giving
		29%	4.	outgoing, friendly, good-natured, open, happy
		25%	5.	physically active, energetic, on the go, busy, restless
Father	23	70%	1.	easy-going, roll with the punches, adaptable, stable
		48%	2.	friendly, outgoing, warm, cheerful, congenial
		43%	3.	introvert, loner, introspective, somber, serious
		39%	4.	honest, just, conscientious, thoughtful, dependable
		30%	5.	hard working, compulsive, involved in work

When extending the perceptions beyond the immediate family, the responses of the parents regarding their mothers and fathers, like the self perceptions, also varied widely and were clusterd into categories for comparisons. The number of clusters for each group differed also. The number of clusters the mothers gave for their mothers was 20, and for their fathers was 18. The number of clusters the fathers gave for their mothers was 23, and for their fathers was 16. Table 6 shows a detailed view of the five most common trait clusters in the order of frequency as given by each parent, along with the percent of the totals.

The mothers gave as many responses regarding their mothers in the busy cluster as in the emotional cluster; however, it is interesting to note that the mothers tended to pick up on the emotional, excitable qualities of both parents, whereas the fathers were more apt to pick up on the awareness of their mothers and the outgoingness of their fathers. The last four clusters of the fathers' perceptions of their fathers drew the same number of responses and are tied in second place.

Allergies

Because of the high incidence of allergies noted in the health records of the children in this study,

TABLE 6

Personality Traits
of
Grandparents

Person	Total Clusters	% of Total	Rank	Cluster Description
Grandmother as seen by Mother	20	40%	1.	emotional, excitable, unstable
		40%	1.	busy, energetic, active, involved
		35%	2.	dominant, domineering, ruled the roost, manipulative
		30%	3.	easy-going, took things in stride, stable
		25%	4.	very bright, inventive, mentally active
Grandfather as seen by Mother	18	56%	1.	very moody, volatile, excitable, nervous, tempermental
		50%	2.	caring, sensitive, demonstrative, soft-spoken
		44%	3.	outgoing, good natured, mixed well
		33%	4.	bright, creative, mentally active, intelligent
		28%	5.	shy, cold, a loner
Grandmother as seen by Father	23	52%	1.	loving, kind, warm, sensitive, supportive, caring
		39%	2.	friendly, outgoing, cheerful, sense of humor, sociable
		35%	3.	active, busy, involved, ambitious
		26%	4.	strong, dominant, strong-willed, manipulative
		22%	5.	intelligent, mentally active, talented, alert
Grandfather as seen by Father	16	50%	1.	outgoing, extrovert, cheerful, sense of humor
		44%	2.	easy-going, happy go lucky, content, happy with life
		44%	2.	workaholic, steady worker, life was business, hard worker
		44%	2.	bright, good mind, intelligent, mentally active
		44%	2.	aloof, stoic, quiet, in own world

other members of the family were also queried about their own and extended family members' allergies. It was ascertained from the interviews that in the families of the 14 children with allergies, 13 of those families had at least one other member who was also affected in the immediate family. In five cases, both father and mother and another sibling were affected.

A total of 15 families reported allergies in their families. Eight fathers, ten mothers, and ten siblings reported having an allergy. Five mothers and one father recalled other members of the extended family who also had allergies.

Test of Attentional and Interpersonal Styles

Examination of the TAIS on an individual basis showed many different patterns. A comparison of raw scores of the subject to either father, mother, or siblings showed no direct relationships to one another.

Group Comparisons of TAIS Scales

Group means were calculated and examined and did show relationships of the groups one to another (see Table 7). The average learning disabled subjects

TABLE 7

TAIS Group Means
for
Subjects, Father, Mother, and Siblings

	TAIS Scale	Subject		Father		Mother		Siblings	
		$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.	$\bar{x}$	s.d.
Attentional	BET	13.5	2.4	16.0	4.7	14.4	2.8	14.9	3.8
	OET	23.8	7.5	13.9	6.0	19.3	8.4	19.5	6.8
	BIT	16.5	4.3	21.6	4.0	19.3	4.0	17.3	4.1
	OIT	15.4	5.3	12.9	3.9	15.1	5.0	15.6	4.2
	NAR	25.1	6.8	28.4	6.0	25.3	8.9	25.9	4.8
	RED	31.4	5.5	24.0	8.3	26.4	5.3	27.4	6.2
Control	INFP	41.4	6.5	48.2	8.7	44.6	5.9	44.8	6.6
	BCON	23.8	5.3	17.4	6.5	16.5	5.3	19.9	5.0
Interpersonal	CON	39.8	8.1	48.2	7.3	44.4	6.3	42.8	6.9
	SES	17.1	7.8	26.2	7.5	23.2	6.6	21.1	5.8
	P/O	14.5	6.2	15.8	5.8	13.6	5.3	15.1	4.8
	OBS	18.2	5.1	13.3	5.8	15.4	3.4	15.9	4.0
	EXT	27.3	11.4	28.8	5.2	27.9	4.1	28.8	5.4
	INT	21.1	6.2	21.5	5.6	20.9	4.5	20.0	4.2
	IEX	14.7	4.5	16.3	4.6	16.3	3.5	15.3	3.5
	NAE	16.1	6.4	10.8	5.1	12.9	4.6	12.4	3.9
	PAE	19.6	4.3	22.5	5.5	22.6	4.5	21.3	3.7

view their external environment (BET) as less busy than that of other members in their family, and yet their attentional overload (OET) is higher. Their internal environment (BIT) is also less busy than other family members', and again the attentional overload (OIT) is greater than both parents', but not as great as their siblings'. Their ability to narrow their attentional focus (NAR) is less than other family members', and yet their higher score on RED reflects an inappropriate and inflexible focus.

They see themselves as processing less information (INFP) than other family members, and yet their higher score on BCON reflects a more impulsive behavioral reaction in dealing with that information. These scores, plotted on profiles which will be discussed later, show the relationships of the INFP to their overload scales OET and OIT as being lower, and therefore they have no place to go to lessen the confusion they experience.

On the remaining scales which deal with the interpersonal styles of the family members, the scores reflect that the subject is lower on the CON scale than others. This score, interacting with the attentional ones, reflects their perceptions that they are

also out of control in interpersonal situations.

In comparing the previous teachers' comments about the subjects, it is not surprising that the mean score on the self esteem scale (SES) is also lower than that of the rest of the family. On the P/O scale, which reflects interest in being involved in active sports, females generally tend to score lower than males. However, in this survey, the predominantly male subjects scored lower than both the siblings and the fathers. Only the mothers, as expected, scored lower than the subjects.

The obsessive scale score (OBS) is also higher than the others. This can be an indicator of the poorer academic performance.

The subjects' mean score on the extroversion scale (EXT) is lower than that of other family members, indicating less desire to mingle with other people, while the subjects' mean on the introversion scale (INT) is higher, indicating more enjoyment in solitary activities. A comparison of the difference between the two scores indicates a greater harmony between the opposing scales. It should be noted that among all of the family members' scores, there are no great differences, but that of the subjects is the least.

An assessment of the scores on the IEX scale shows the subjects to be the least intellectually expressive of the family. They generally tend not to ask questions, express opinions on issues, or participate in discussion. This may be due to a high overload on the attentional scales, higher scores on the RED, and the second highest score on the introversion scale. Confusion, inflexibility in narrowing the focus, and a tendency to be more solitary would combine to make it more undesirable or difficult to communicate effectively.

The negative affect (NAE) score is the highest, and their positive affect (PAE) score is the lowest. This indicates that they tend to show more anger and negative feelings which coincides with the previous findings on personality traits in the interview questionnaire. They also show fewer positive feelings than others in the family. A comparison of the difference between the means of the two scales shows that none of the family members, including the subjects, exhibits large differences.

Attentional Overload, Inappropriate Focus and Impulsivene

An examination of the individual profiles in which the raw scores were plotted onto preconverted (z scores, standard deviations) profile sheets showed a high

proportion of family members with attentional overloads, inappropriate focus, and impulsive tendencies in their behavior, as shown on Table 8.

It was observed that: subjects in 17 families, fathers in 4 families, the mothers in 10 families, and the siblings in 15 families scored higher on OIT than BIT; subjects in 12, fathers in 3, mothers in 9, and the siblings in 9 families scored higher on RED than NAR; and subjects in 14, fathers in 5, mothers in 4, and the siblings in 10 families scored higher on BCON than INFP. As measured on the TAIS, more families show the learning disabled subjects with attentional overloads, inappropriate focus of attention and impulsive control. The numbers also show a high proportion of other family members with the same problems. More families show mothers rather than fathers as affected on all three attentional scales and a majority of the families also show the siblings with the same attentional problems. This supports the findings of the incidence of learning problems gathered from the interview questionnaire.

Of the 94 people interviewed and profiled: 44 have an external attentional overload, 43 have an internal attentional overload, 33 have an inappropriate focus of attention, and 33 have inappropriate impulsive control.

TABLE 8

Family Comparisons of
Attentional Overload, Inappropriate Focus, and Impulsive Control

Family No. (Members)	Higher OET than BET S F M sibs.	Higher OIT than BIT S F M sibs.	Higher RED than NAR S F M sibs.	Higher BCON than INFP S F M sibs.	Ext. overload	Family % Int. overload	Inapp. Focus	Impul. Control
1. (3)	x x x	x x x	x x x	x x	100%	100%	100%	67%
2. (3)	x	x x	x	x	33%	67%	33%	33%
3. (4)	x x	x x	x		50%	50%	25%	0%
4. (4)	x x x	x x x	x x	x x x	75%	75%	50%	75%
5. (4)	x x	x x	x x x	x	50%	50%	75%	25%
6. (4)	x	x x	x x		25%	50%	50%	0%
7. (4)	x	x		x	25%	25%	0%	25%
8. (4)		x	x	x	0%	25%	25%	25%
9. (4)	x x	x x	x	x x	50%	50%	25%	50%
10. (4)	x x	x x	x	x	50%	50%	25%	25%
11. (4)	x x x	x x x x	x x	x x	75%	100%	50%	50%
12. (5)	x x x	x x x	x	x x x	60%	60%	20%	60%
13. (5)	x x	x x	x	x	40%	40%	20%	20%
14. (5)	x x xx	xx	x x	x x x	80%	40%	40%	60%
15. (6)	x xx	x xx	x xx	x x	50%	50%	50%	33%
16. (6)	x x xx	x x xx	x x x	x x x	67%	67%	50%	50%
17. (6)	x xxx	x xxx	x xx	x xx	67%	67%	50%	50%
18. (6)	x x x x	x x	x	x x	67%	33%	16%	33%
19. (6)	x x xx	x xxx	x x xxx	x	67%	67%	83%	16%
20. (7)	x x	xx	x	xx	29%	29%	14%	42%
Total Families Affected	17 4 10 13	13 5 9 15	12 3 9 9	14 5 4 10	14 (50+)	14 (50+)	9 (50+)	8 (50+)

Note: S = Subject F = Father M = Mother sibs. = siblings

Normative data supplied with the TAIS and providing five comparison groups [music students (mean age 18.4), psychology students (18.2), psychiatric patients (40.9), medical patients (43.1), business executives (37.6), and police applicants (25.2)] show overload on attentional scales as not uncommon; however, the attentional overloads of the subjects in this study compare with the music students, medical patients and psychiatric patients. The amount of attentional overload with the music students is slight, with the medical patients a bit more, and with the psychiatric patients quite high.

Looking back at the individual families and the percent of members in each family with the same patterns, it was observed that: 9 families have over 50% of their members with an external overload; 8 families have over 50% of their members with an internal attentional overload; 3 families have over 50% of their members with an inappropriate focus; and 4 families have over 50% of their members with inappropriate impulsive control. When looking at the families for those who have at least 50% or more of their members affected, the numbers increase to 14, 15, 9, and 8 respectively.

Intrafamily comparisons of the subjects who scored higher on their overload scales provide some interesting observations which are detailed in Table 9.

TABLE 9

Intra Family Comparisons

Attentional Overloads and Inappropriate and Narrow Focus

	Attentional Overloads			Inappropriate, Narrow Focus			Both
	External High OET Low BET	Internal High OIT Low BIT	Both External Internal	External High RED Low BET	Internal High RED Low BIT	Both External Internal	Attentional Overload + Inappropriate, Narrow Focus
Subjects	17/20 85%	13/20 65%	12/20 60%	17/20 85%	17/20 85%	14/20 70%	11/20 55%
Mothers	9/17 53%	4/13 31%	4/12 33%	4/17 24%	9/17 53%	4/14 28%	2/11 18%
Fathers	3/16 19%	5/12 42%	2/11 18%	4/16 25%	3/16 19%	3/13 23%	2/10 20%
Siblings	15/29 52%	13/19 68%	11/18 61%	14/26 42%	19/30 63%	10/22 45%	9/18 50%

Out of the 20 subjects, 17 scored higher on their OET than on their BET, indicating individuals who tend to be distractible, do not stay focused on a problem, and whose performance is disturbed because of sights and sounds around them. This is an expected finding for the subjects. In their families, it is found that 53% of the mothers, 19% of the fathers, and 52% of the siblings also show similar patterns.

Individuals who are internally overloaded also tend to be distractible, try to do too many things at once, do not stick to a task, and may confuse others. Out of the 20 subjects, 13 indicated this to be the case. In their families, it was found that 31% of the mothers, 42% of the fathers, and 68% of the siblings responded similarly.

There were 12 subjects who rated themselves higher on both the external and internal overload scales, and of these 12 subjects' families, 33% of the mothers, 18% of the fathers, and 61% of their siblings showed the same patterns.

Inappropriate Attentional Focus

A closer look at the families' inappropriate attention in a narrower sense was to examine those who had a narrow external focus. These are individuals

who fail to adjust the focus or fail to perceive and use all of the information available. They tend to focus on one aspect at a time and are unable to respond to more than one issue at a time. The scores tend to be high on RED and low on BET. Again, 17 of the subjects rated themselves as responding in this manner. Regarding the families of these 17 subjects, 24% of the mothers, 25% of the fathers, and 42% of the siblings responded likewise.

Individuals whose scores are high on RED and low on BIT tend to have a narrow and inappropriate focus. They tend to lock on to their own thoughts and, therefore, lose flexibility and contact with their environment. High anxiety levels can bring about this type of attention and cause the individual to respond impulsively, with too much too soon. Eighty-five percent of the subjects also rated themselves in this category. Regarding the families of these 17 subjects, it is noted that 53% of the mothers, 19% of the fathers, and 63% of the siblings responded similarly.

In combining the external and internal focus, it was found that 14 subjects had problems in both areas. In the families of these 14 subjects, 28% of the mothers, 23% of the fathers, and 45% of the siblings also had problems in both areas.

Further analysis showed 55% of the learning disabled subjects as being overloaded attentionally and having an inappropriate, narrow focus. On this more global scale, fewer members of the family were affected; however, 50% of the siblings in those families still showed the same pattern as the subject.

Self Esteem and Control

Intrafamily analysis of the self esteem and control scales on the interpersonal scales shows interesting relationships in light of the attentional overload scales. A breakdown of information is shown in Table 10.

It is believed that an overload condition may decrease self esteem and control in interpersonal situations. Generally, 65% of the subjects, 16% of the fathers, 45% of the mothers, and 40% of the siblings showed self esteem below the 50th percentile. Further examination showed also that in ten families, 50% or more of their members' self esteem was below the 50th percentile. Of those ten families, four had more than half of their members whose self esteem was below the 50th percentile.

Regarding the control scale (CON), 75% of the subjects, 16% of the fathers, 25% of the mothers, and 40% of the siblings were below the 50th percentile in

TABLE 10

Intrafamily Comparisons
Self Esteem, Interpersonal Control and Obsessiveness
In Relation to Attentional Overloads and Inflexible Focus

Members in Family	SES Below 50th Percentile				CON Below 50th Percentile				Attentional Overload + Low CON or Low SES				OBS High RED High Obsessive/Compulsive			
	S	F	M	Sibs.	S	F	M	Sibs.	S	F	M	Sibs.	S	F	M	Sibs.
3		x	x			x				C/S	/S		x	x	x	
3	x				x				C/S				x			
4	x	x			x		x	x	C/S	/S			x			
4	x		x	x	x			x	C/S		/S	C/S	x			x
4	x			x	x				C/S			/S	x			
4	x	x			x	x	x		C/S	C/S	C/			x		
4	x		x		x									x		
4													x			
4		x				x					C/S				x	xx
4	x		x		x				C/S				x			
4	x		x		x				C/S		/S		x	x	x	
4				x				x				C/S				x
5	x			x	x	x		x	C/S	C/		C/S	x			x
5			x	x	x		x		C/				x			x
6	x				x			xx	C/S			C	x			xx
6	x		x	xx	x		x	xxx	C/S		C/S	C/SC/S	x			
6				xx	x			xxx				C/SC/S			x	xx
6	x		x	xx	x			x	/S			/S	x			x
6	x			x	x				C/S				x		x	xxx
7				xx				x				/S	x			x
Family Total	13	3	9	10	15	3	5	9	12/12	3/3	3/5	6/8	15	2	7	10
Indiv. Total	13	3	9	14	15	3	5	14	12/12	3/3	3/5	8/10	15	2	7	14

the need for control in interpersonal situations. As a whole, seven families show half or more than half of their members who do not tend to bein control, and of those seven families, five have more than half their members below the 50th percentile.

Comparing the overload scales to the self esteem and control scales for each individual, one finds that of the 39 individuals in the families whose self esteem was below the mean, 77% of them also have an attentional overload, and of the 37 whose control in interpersonal situations is also below the mean, 70% also have an attentional overload.

An analysis of those whose scores on the obsessive (OBS) scale are high along with an elevated score on the RED scale, shows that 70% of the subjects, 11% of the fathers, 40% of the mothers and 40% of the siblings scored likewise. When looking at the intrafamily relationships, one finds that seven families have 50% or more of their members who tend to fall into this category, and of those seven families, four have more than half who show obsessive compulsive tendencies.

Examination of the profile average of the subjects shown in Figure 2 illustrates graphically a portrait of the learning disabled subject. It indicates a definite upward slope on all three sets of attentional scales--

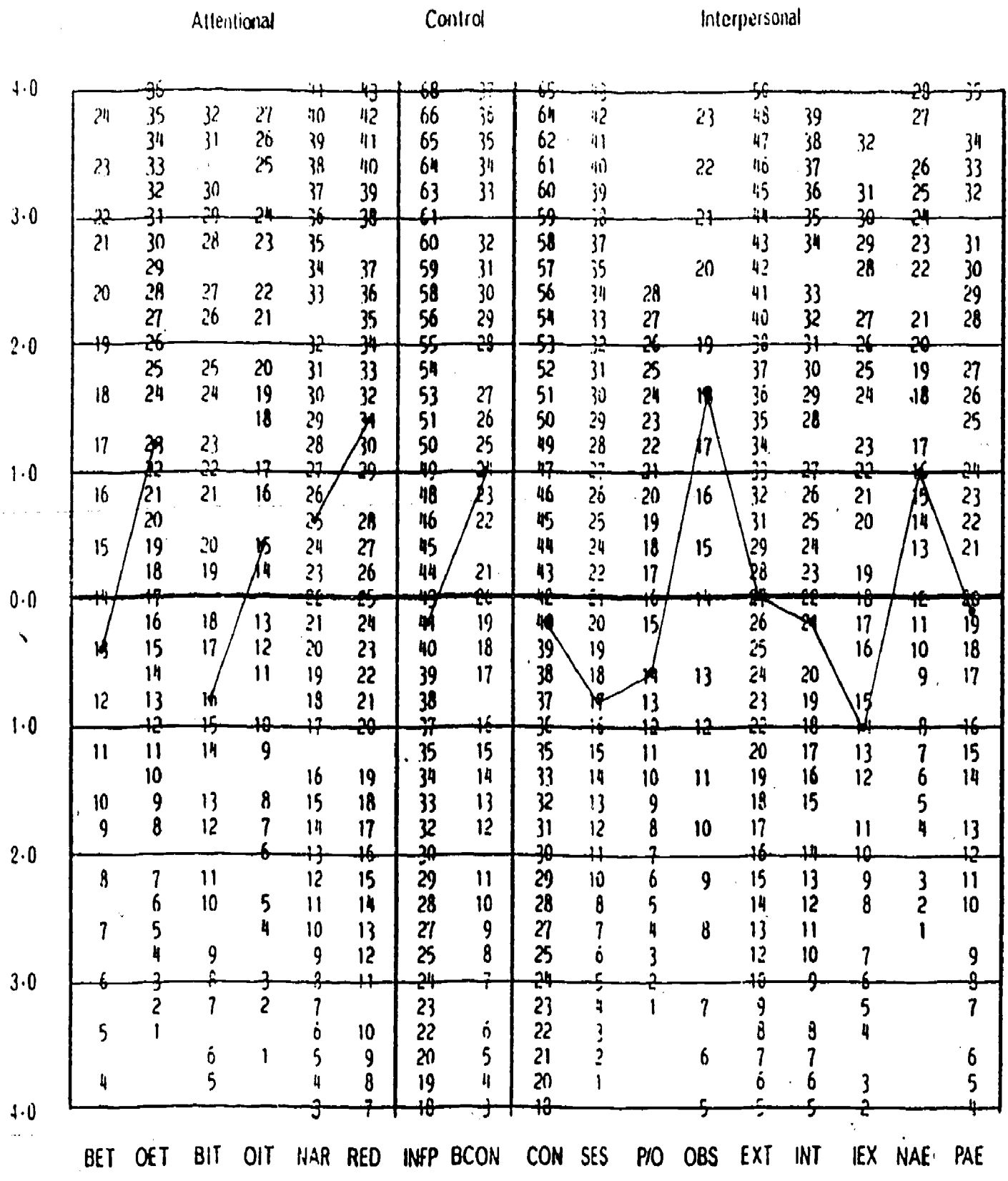


Figure 2. Average learning disabled subject. (n = 20, 16 male + 4 female, mean age 15.11 years)

BET vs. OET, BIT vs. OIT, and NAR vs. RED--as well as on the control scales--INFP vs. BCON. The upward slope is indicative of attentional overload, inappropriate focus and inappropriate impulsive control.

Male vs. Female

When dividing the learning disabled subjects into male vs. female, whose mean ages are 16.5 and 14.2 respectively, the upward slopes are still in evidence. These are shown in figures 3 and 4. The females' slopes on the NAR vs. RED and INFP vs. BCON show less of an incline, even though they are younger. Both males and females see themselves as processing as much information, but the females are more appropriate in their control of that information. The male and female RED scores are at about the same high elevation; however, the female feels herself more effective in the narrowing of attention.

The males' score tends to show more control in interpersonal situations. They also tend to be more physically oriented, which is not unexpected. They are more able to express negative affect. The females' profile shows more self esteem, more obsessiveness, and more introversion.

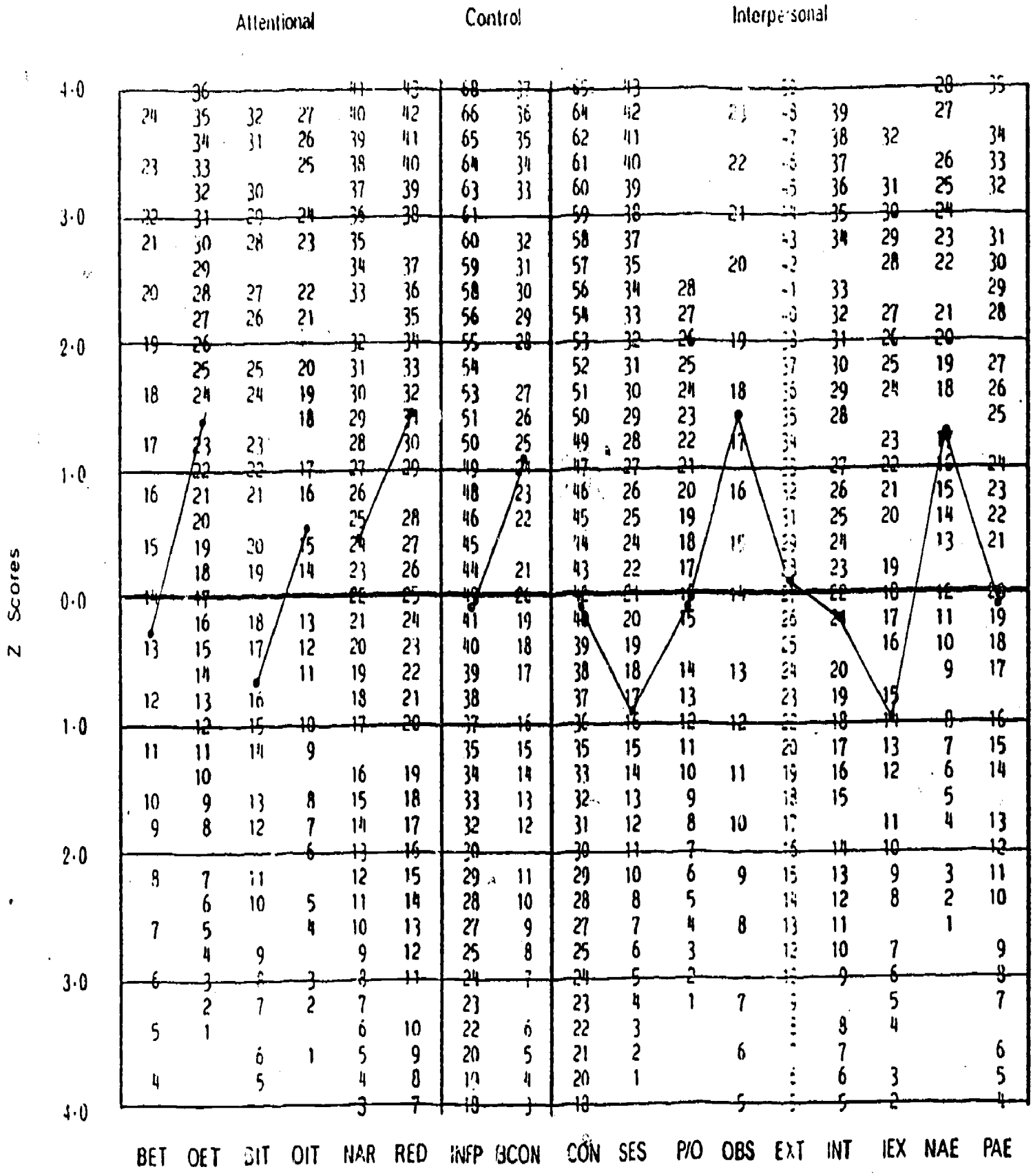


Figure 3. Average male subject. (n = 16, mean age 16.5 years)

to be less obsessive and show less negative affect than the subject.

A separation of the siblings into age differences of those 15.0 and over and those 14.11 and under is shown in Figures 13 and 14. The mean age of those over was 21.0 years, and the mean age of those under was 10.7 years. There were 23 siblings, 9 male and 14 female, over 15.0, and there were 12 siblings, 6 male and 6 female, under 14.11 years.

The resemblance of the average younger sibling's profile to that of the average learning disabled subject is more evident, whereas the dissimilarity of the average older sibling's profile to that of the average subject is in greater evidence. The younger sibling's profile, like that of the mother, is similar in the first two sets of attentional scales. The third set is similar in slope but not in degree. It could be expected that younger people would exhibit less mature attentional patterns than older ones, as those shown by the sibling's and subject's profile patterns under 14.11 years, but it would not be expected in the older ones'.

The older subjects, whose mean age is 18.8 years, show greater attentional overloads than the younger siblings, whose mean age is only 10.7 years.

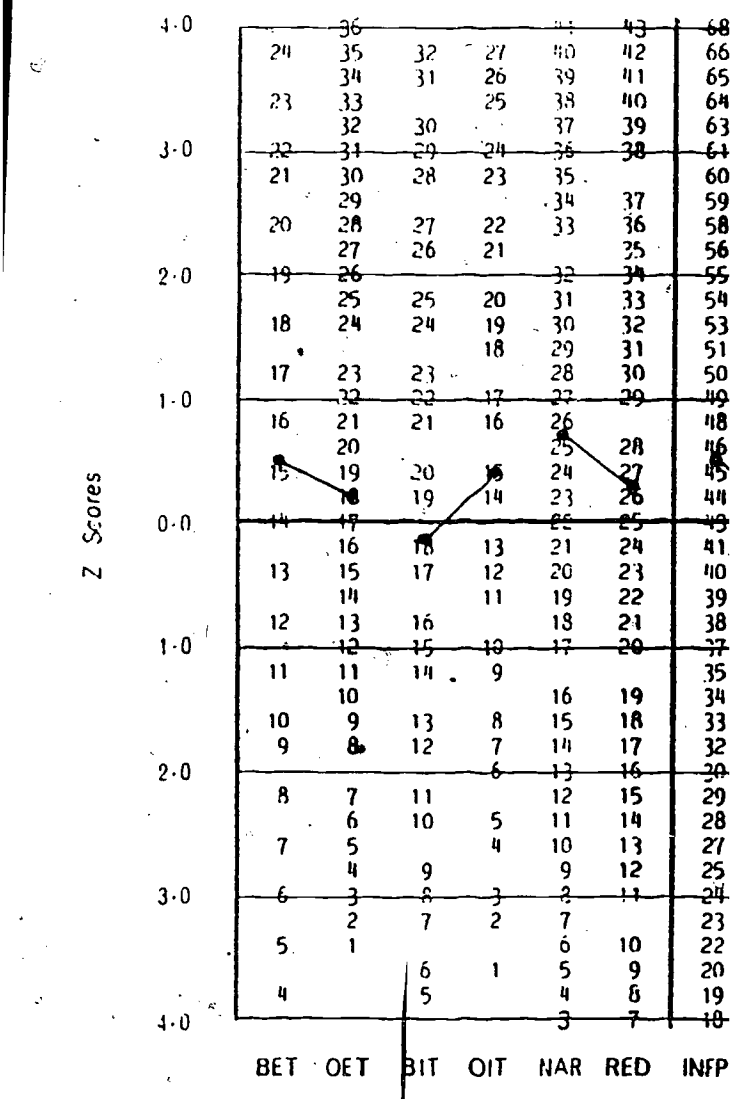
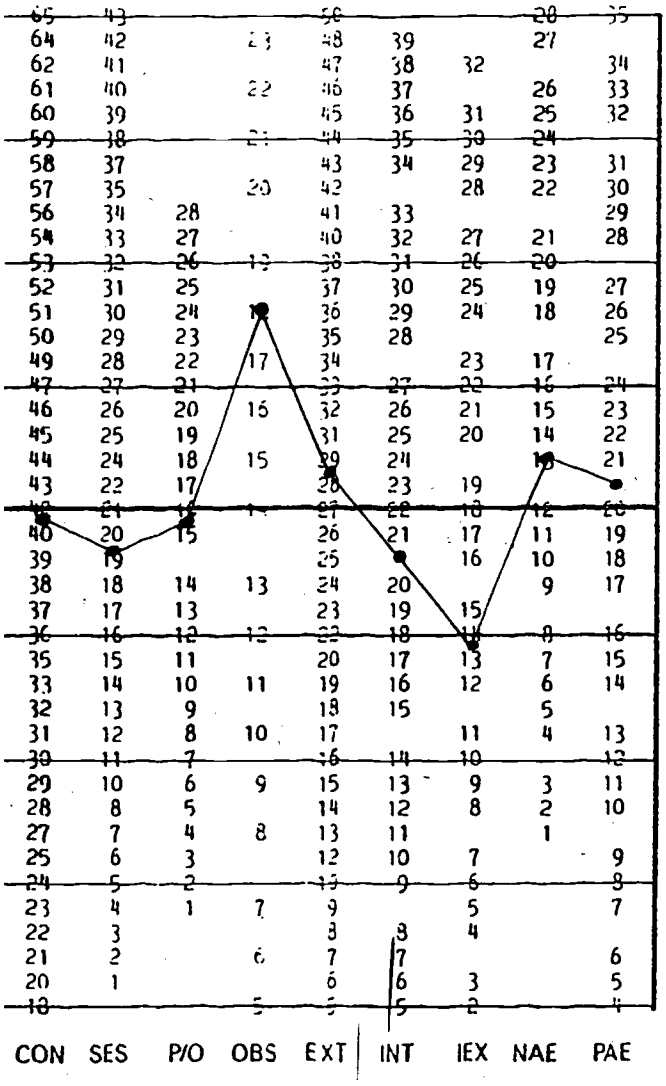


Figure 13. Average sibling 15.0 years and ov

Interpersonal



(n = 12, 6 male + 6 female, mean age 10.7 y

The younger sibling is also younger than the younger subjects, whose mean age is 12.9 years. The average subject under 14.11 exhibits less of a slope than the younger sibling, but the older subject's slope is much greater.

Further analysis of male-female differences of the subjects and the siblings is shown on the profiles in Figures 15, 16, 17, and 18. There is only one constant throughout all the profiles--the upw rd slope of the internal attentional scales. It doe' not seem to make any difference whether the profile average is that of male, female, subject, sibling, under 14.11 years, or over 15.0 years: like the mother's slope, they may differ in degree, but not in direction.

A closer scrutiny of the average brother's profile, both older (mean age 24.7) and younger (mean age 10.8), shows the older brother's external attentional scales and the effectiveness of narrowing attention with a directional change for the better. The older brother's profile has smoothed out in the peaks and valleys in the interpersonal scales and the majority of the scores are in the 50th to 84th percentiles. The older brother shows a more mature profile.

A closer scrutiny of the average sister's profile, both older (mean age 20.2) and younger (mean

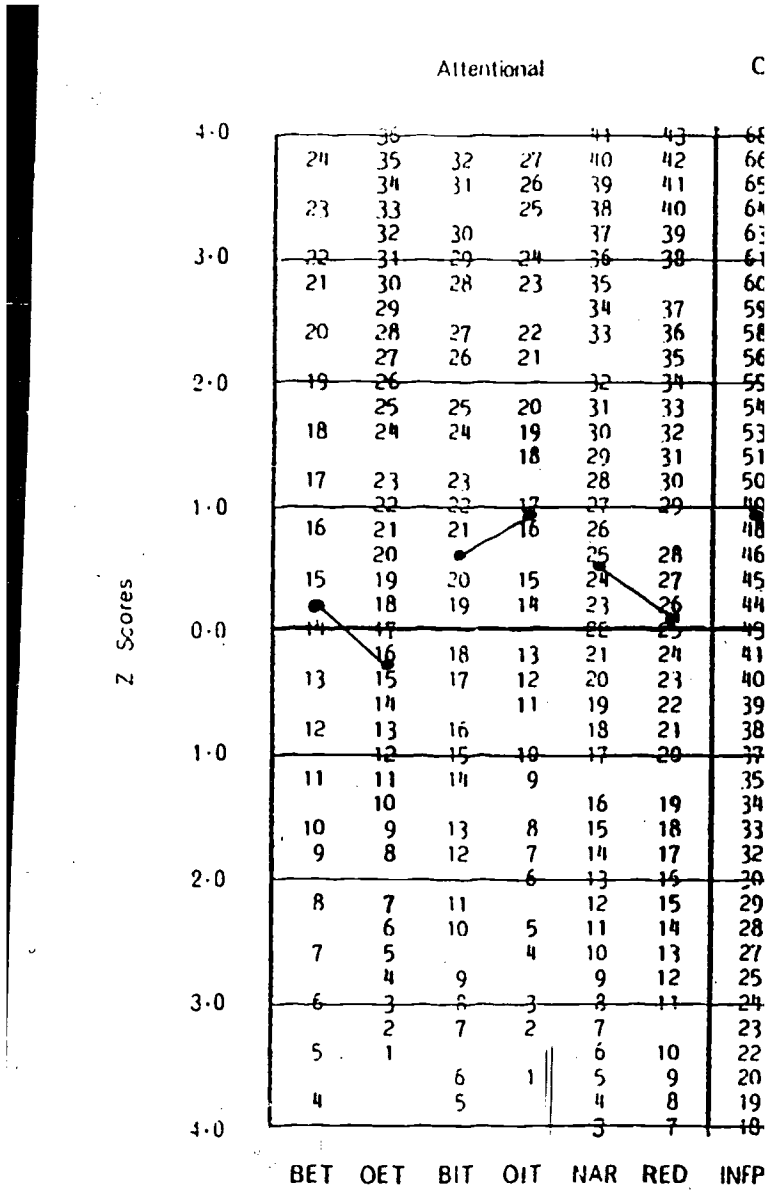


Figure 15. Average brother 15.0 years and over

age 10.5), shows a slight directional change for the better, both in the effectiveness of the narrowing of attention and in the information processing scales. The older sister's profile also has smoother peaks and valleys in the interpersonal scales, showing a more mature profile than the younger sister.

Generally, the younger siblings, whether male or female, are characterized by attentional overloads and obsessive behavior. These patterns are also characteristic of the learning disabled subject, both older and younger.

Interfamily Comparisons

The last set of profiles for analysis deal with comparisons across the families. These are shown in Figures 19, 20, and 21. The average family profile shows an upward slope in the first two attentional scales. This indicates the strength of the attentional overload of the subjects, plus the slighter ones of the mothers and siblings. Without the subject (Figure 20), the profile has improved slightly. There is now a slight directional change for the better in the external attentional scales; there is a leveling off in the internal attentional scales; and both the effectiveness of narrowing attention and impulse control have strengthened slightly.

One step further in the analysis of families was to remove the younger siblings as well as the learning disabled subjects. This is shown in Figure 21. Without the factor of immaturity, there is some more improvement. All the directional scales are now sloping in a downward direction; however, the strength of the internal scales is weaker than that of the others. This is indicated by the degree of the slope. Even with the removal of the subjects and younger siblings, there is still evidence of a slight problem in internal attention. There were no significant changes in the interpersonal scales in the second analysis that bear further mention.

DISCUSSION

Conclusions, Summary, Recommendations

One of the major puzzles that educators face today is that of the children labeled as "learning disabled." Many special programs have been set up, and many different approaches have been attempted to deal with these children. Some of the programs and approaches have been effective; others have not. The reasons they work for some but not for others are still debated, and no matter what the reasons are, the question that is continually raised, not only by the educators and the professionals who deal with the children but by the parent as well, is "Why?"

Many theories have been suggested and supported, but no definitive statements, that the majority of researchers or educators can agree on, are known to exist. It has been suggested that familial factors are involved, and studies which suggest that to be the case have been conducted. On the other hand, there have also been studies which suggest that extra-familial factors are involved. What is evident is that there seem to be no clear cut answers (Ross & Ross, 1976).

One of the problems in dealing with the learning disabled population is the fact that it is not a

homogeneous group. As Cantwell (1975) suggests, discrete differences among the various subgroups are yet to be defined. Added to this realization is the fact that identification of the group is relatively recent (Cruickshank, 1961).

When disparities exist within a population, one of the first steps is to look for commonalities within a select group and go from there. By reducing the variables, the narrowed focus enables one to look for commonalities even further. It was with that purpose in mind that this descriptive study was attempted.

A select group of learning disabled students who were responsive to stimulant medication, along with other members of their immediate families, were interviewed. The interview covered their backgrounds, their attentional patterns, and their interpersonal styles to ascertain if there was anything in their backgrounds which might have some connection to one another, and which might also occur with meaningful incidence.

One of the variables had been removed in the selection of children who had been responsive to stimulant medication. It has been shown clinically (Swanson & Kinsbourne, 1975) that there are students who respond favorably, as well as those who do not. Even with this variable removed, the study still found other variables working within the group. Future

researchers will have to take into consideration not only stimulant-responsiveness/nonresponsiveness, but also sex, age, and activity levels, in order to ensure uniformity in their findings. It is suggested that attempts be made to compare further the hypoactive students to the hyperactive students. It is also suggested that further collections of data on the attentional patterns of the general population of learning disabled be conducted to confirm the findings of this study. One of the conclusions this study suggests is that the attentional patterns, which confirms teachers' observations, are, in fact, measurable.

Although no strong familial patterns of import can be concluded from this study, there are some patterns which did emerge that bear further research to clarify the questions it raised. From both the interview data and the test data, an emergent pattern was the recurrence of the similarity of the mother to the subject. More mothers than fathers had a past learning problem. This is surprising, since it is generally accepted that there are more boys than girls who are learning disabled. More mothers reported family members from their side of the family with learning problems than fathers did, although they reported more brothers than sisters with the problem. More mothers than fathers reported having an allergy, along with more

members from their side of the family.

This higher incidence of reporting on the side of the mothers may be a case of sex-role socialization. Generally, women tend to be more open in an interview situation. However, on the TAIS, more mothers than fathers exhibited attentional overloads like that of the learning disabled child. Since the TAIS items are behaviorally anchored, this may not be the case.

The question of familial vs. extrafamilial factors is still in doubt. Allergies are familial, but attentional patterns may be learned and therefore would be extrafamilial. Further research is indicated to ascertain the connection of the high incidence of allergies reported in this study to the learning disabled population in general. Research on cerebral allergies has shown their frequent interlocking relationship with brain dysfunction (Wunderlich, 1973).

Since many allergies, asthma for example, have an emotional or psychological basis, it is interesting to speculate on the connection between learning disabilities and allergies. High anxiety or stress can produce the necessary chemical changes to trigger an allergenic reaction. The question then raised is, "Are learning disabilities a form of allergenic reaction?" The high incidence of attentional overload, inappropriate

focus and inappropriate impulsive control of the subjects and the mothers would imply stressful conditions. Certainly, more research on this conjecture should be undertaken.

The questions raised regarding the attentional patterns within the families of this study need to be researched further. The TAIS acknowledges that an overload pattern exists in several groups used for study, but none on learning disabled populations have been attempted before this. A large sampling of the families of learning disabled children need to be looked into to confirm the findings in this study.

Of great concern is the learning disabled child's future. In DePalma's (1977) study, which used a group of psychiatric patients and non-psychiatric patients, the psychiatric patients, like the learning disabled subjects of this study, described themselves as more overloaded, both by external and internal stimuli, and less effective in narrowing their attentional focus to task-relevant stimuli. It also noted that they were more expressive of negative affect than five other groups in the TAIS. Profiles of the psychiatric patients along with a profile of business executives are shown in Figures 22 and 23 for comparison.

The father's profile in this study is quite similar to the business executive's profile, and the

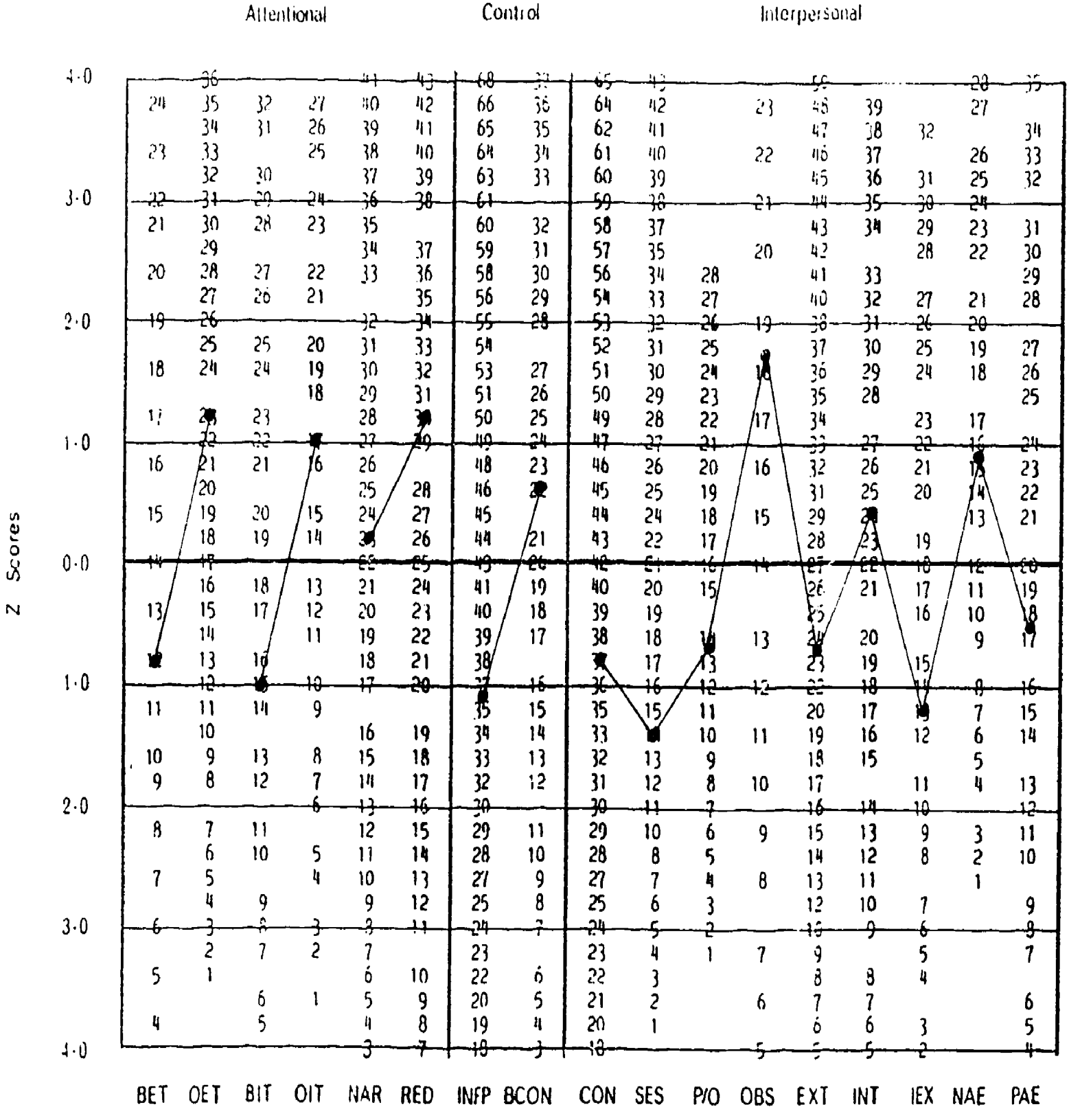
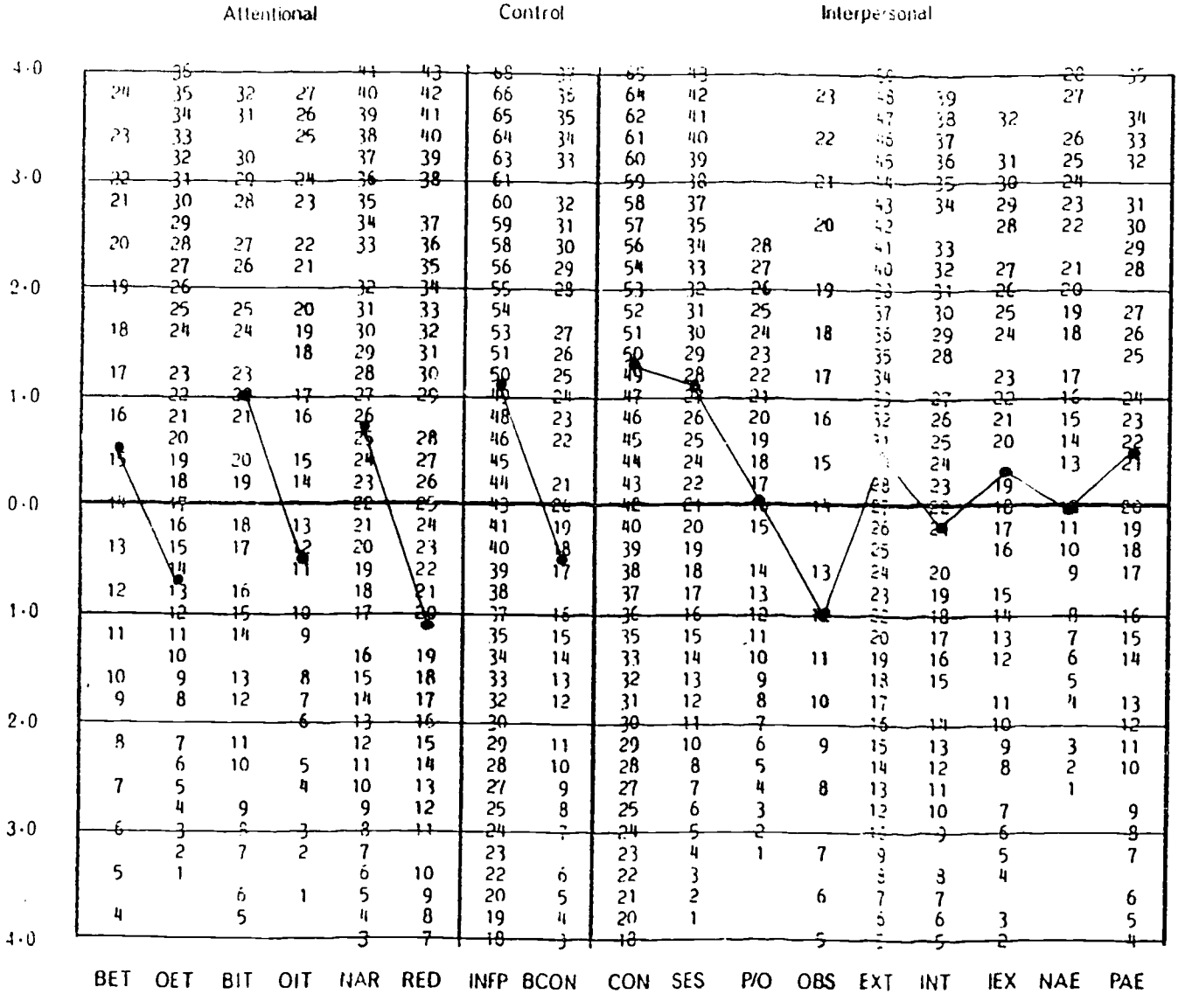


Figure 22. Psychiatric patients.



igure 23. Business Executives.

learning disabled subject's is similar to the psychiatric patient's. This similarity poses the question of their future and, conversely, it may point out the past of the psychiatric patient who was not identified and helped earlier. Regardless, it does show that continued support and reinforcement of the child's self esteem is necessary.

Also in question is the hypoactive child. Much necessary concern has been raised in pursuit of appropriate therapy and treatment of hyperactive children, mainly because of their very visible behavior. However, the profile of the hypoactive subjects suggests that they may be in greater need. Because of their "invisible" behavior, they are often passed over. Educators need to be aware that the greater activity levels of the hyperactive child are not necessarily indicative of greater need. More research on hypoactive children is indicated.

Because the sample of subjects was small and from a select group, valid comparisons cannot be made with the general population of learning disabled, and it is suggested that future research along these same lines be continued to validate the findings of this study.

The sensitivity of the TAIS to younger students, especially in the interpersonal scales, is in doubt, since a number of items require a certain amount of

life experience to answer. It was felt that the attentional and control areas were more sensitive. Development of a similar instrument, or refining the TAIS specifically for a younger population, is definitely suggested. Earlier identification of attentional problems could shorten the duration of treatment by identifying salient problem areas.

A limitation in tabulation from the open ended questionnaire could be eliminated by using a more structured list of adjectives gathered from the clusters of answers the parents provided. A more specific list, cross referenced to the interpersonal styles of the TAIS, may give some clues as to the perceptions they hold of others.

It might be assumed by some that an unhappy homelife would be more conducive to producing a child with a learning disability; however, in the case of these families, the home life or style of upbringing did not necessarily have any bearing on the matter. It was found that the parents came from diverse backgrounds and were raising their children in diverse styles. Also, the positive affect for the majority of the members of the family being at or above the 50th percentile could disclaim that idea.

BIBLIOGRAPHY

Ames, L.B., Gillespie, C., and Straff, J. Stop School Failure. New York: Harper and Row Publishers, 1972.

Barkley, R.A. "A Review of Stimulant Drug Research with Hyperactive Children," Journal of Child Psychology and Psychiatry, XVII (April, 1977), 136-65.

Barkley, R.A., and Jackson, T.L. "Hyperkinesis, Autonomic Nervous Activity and Stimulant Drug Effects," Journal of Child Psychology and Psychiatry, XVIII (September, 1977), 347-57.

Berman, A. "Learning Disabilities and Juvenile Delinquency: Initial Results of a Neuropsychological Approach," in Education Yearbook, 1973-74, edited by Bernard Johnston. Riverside, New Jersey: Macmillan Corporation, 1974.

Black, P.D., ed. Drugs and the Brain. Baltimore, Maryland: Johns Hopkins Press, Inc., 1960.

Bloom, B.S. "Affective Outcomes of School Learning," Phi Delta Kappan, (November, 1977), 193-98.

Bylinsky, G. "A Preview of the 'Choose Your Mood' Society," Fortune, (March, 1977), 220-27.

Cantwell, D.P., ed. The Hyperactive Child: Diagnosis, Management, Current Research. New York: Spectrum Publications, Inc., 1975.

Cantwell, D.P. "Genetic Studies of Hyperactive Children," in Genetic Research in Psychiatry, edited by R.R. Fieve, D. Rosenthal, and H. Brill. Baltimore, Maryland: Johns Hopkins University Press, 1975.

Cantwell, D.P. "Psychiatric Illness in the Families of the Hyperactive Child," Archives of General Psychiatry, XXVII (August, 1972), 414-17.

Carpenter, R.L., and Sell, C.J. "Measuring Effects of Psychoactive Medication in a Child with a Learning Disability," Journal of Learning Disabilities, VII (November, 1974), 21-26.

Connors, C.K. "Recent Drug Studies with Hyperkinetic Children," Journal of Learning Disabilities, IV (November, 1971), 476-83.

Comly, H.H. "Cerebral Stimulants for Children with Learning Disorders," Journal of Learning Disabilities, IV (November, 1971), 484-90.

Cruickshank, W.M., et al. A Teaching Method for Brain Injured and Hyperactive Children. Syracuse, New York: Syracuse University Press, 1961.

Denhoff, E., Davids, A., and Hawkins, R. "Effects of Dextroamphetamine on Hyperkinetic Children: A Controlled Double Blind Study," Journal of Learning Disabilities, IV (November, 1971), 491-98.

DePalma, D.M. and Nideffer, R.M. "Relationships between the TAIS and Psychiatric Subclassifications," Journal of Personality Assessment, (December, 1977), 622-31.

Dingham, W., and Sportn, M.B. "Learning: Chemical Basis for Learning," in Encyclopedia of Education, edited by L.C. Deighton. Riverside, New Jersey: Macmillan and the Free Press, 1971.

Forman, P.M. "Pharmacological Intervention," in Progress in Learning Disabilities, edited by H.R. Myklebust. New York: Grune and Stratton, 1975.

Grinspoon, L., and Singer, S. "Amphetamines in the Treatment of Hyperactive Children," Harvard Educational Review, XLIII (November, 1973), 515-55.

Gross, M.B., and Wilson, W.C. Minimal Brain Dysfunction. New York: Brunel-Mazel, Inc., 1974.

Groves, P.M., and Rebec, G.V. "Biochemistry and Behavior: Some Central Actions of Amphetamines and Antipsychotic Drugs," in Annual Review of Psychology, edited by M.R. Rosenzweig and L.W. Porter. Palo Alto, Calif.: Annual Reviews, Inc., 1976.

Gurowitz, E.M. The Molecular Basis of Memory. Englewood Cliffs, New Jersey: Prentice Hall, 1969.

Harris, L.P. "Attention and Learning Disorder Children: A Review of Theory and Remediation," Journal of Learning Disabilities, IX (February, 1976), 104-5.

Kinsbourne, M. "The Hyperactive and Impulsive Child," Ontario Medical Review, (December, 1975), 657-60.

Lambert, N., et al. "Hyperactive Children and the Efficacy of Psychoactive Drugs as a Treatment Intervention," American Journal of Orthopsychiatry, XLVI (April, 1976), 335-52.

Laufer, M.W. "Long Term Management and Some Follow Up Findings on the Use of Drugs with Minimal Cerebral Syndromes," Journal of Learning Disabilities, IV (November, 1971), 519-22.

Lerner, J.W. Children with Learning Disabilities. Boston, Massachusetts: Houghton Mifflin Co., 1976.

Martin, D. "Hyperactive Behavior Disorders in Children: Clinical Results with Methylphenidate Hydrochloride (Ritalin)," Western Medicine, (January, 1967), 23-7.

McClelland, D. "Testing for Competence Rather than for Intelligence," American Psychologist, XXVIII (April, 1973), 1-14.

McElgunn, B. "Learning Disability: The Need for Medical Research," Journal of Learning Disabilities, IX (June-July, 1976), 393-95.

Millichap, J., et al. "Treatment of Minimal Brain Dysfunction Syndromes," Pediatric Clinics of North America, XIV (November, 1967), 767-77.

Morrison, J.R., and Stewart, M.A. "Bilateral Inheritance as Evidence for Polygeneticity in Hyperactive Child Syndrome," Journal of Nervous and Mental Disease, CLVIII (March, 1974), 226-82.

Neisworth, J.T., et al. "Naturalistic Assessment of Neurological Diagnosis and Pharmacological Intervention," Journal of Learning Disabilities, XI (March, 1976), 149-52.

Nideffer, R.M. Test of Attentional and Interpersonal Style: Interpreter's Manual. Rochester, New York: Behavioral Research Applications Group, Inc., 1977.

Page, J.G., et al. "Pemoline (Cylert) in the Treatment of Childhood Hyperkinesis," Journal of Learning Disabilities, VII (November, 1974), 498-503.

Pihl, R.O., and Parkes, M. "Hair Element Content in Learning Disabled Children," Science (October 14, 1977), 204-6.

Rie, H.E., et al. "Effects of Ritalin on Underachieving Children: A Replication," American Journal of Orthopsychiatry, XLVI (April, 1976), 313-22.

Ross, D.M., and Ross, S.A. Hyperactivity: Research, Theory, and Action. New York: Wiley Science Series, John Wiley and Sons, 1976.

Rossi, A.O. "Genetics of Higher Level Disorders," Journal of Learning Disabilities, III (August, 1970), 387-90.

Schain, R.J., and Reynard, C.L. "Observation on Effects of a Central Stimulant Drug (Methylphenidate) in Children with Hyperactive Behavior," Pediatrics, (May, 1975), 709-16.

Silver, L.B. "A Proposed View of the Etiology of the Neurological Learning Disability Syndrome," Journal of Learning Disabilities, IV (March, 1971), 6-15.

Springer, N.S., and Fricke, N.L. "Nutrition and Drug Therapy for Persons with Developmental Disabilities," American Journal of Mental Deficiency, LXXX (November, 1975), 317-22.

Stewart, M.A. "Hyperactive Children," Scientific American, CCXXII (April, 1970), 94-8.

Stewart, M.A., and Morrison, J.R. "Affective Disorder Among Relatives of Hyperactive Children," Journal of Child Psychiatry, XIV (September, 1973), 209-12.

Swanson, J.M., and Kinsbourne, M. "Stimulant-Related State Dependent Learning in Hyperactive Children," Science, CXCII (June 25, 1976), 1354-7.

Smith, L.H. Improving Your Child's Behavior Chemistry. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1976.

Sykes, D.H., et al. "The Effects of Methylphenidate (Ritalin) on Sustained Attention in Hyperactive Children," Psychopharmacologia, XXV (June 28, 1972), 262-74.

Tarver, S.G., and Hallaban, D.P. "Attention Deficits in Children with Learning Disabilities," Journal of Learning Disabilities, VII (November, 1974), 560-9.

Uhr, L., and Miller, J.G. (Eds.). Drugs and Behavior. New York: John Wiley and Sons, Inc., 1960.

Villet, B. "Opiates of the Mind," Atlantic Monthly, (June, 1978), 82-9.

Wacker, J.A. "The Dyslogic Syndrome," Texas Key, Dallas, Texas Association for Children with Learning Disabilities (September, 1975), 2-7.

Wade, M.C. "Effects of Methylphenidate on Motor Skills Acquisition of Hyperactive Children," Journal of Learning Disabilities, IX (August-September, 1976), 443-6.

Weithorne, C.J., and Ross, R. "Stimulant Drug for Hyperactivity: Some Additional Questions," American Journal of Orthopsychiatry, XLVI (March, 1976), 188-9.

Wender, P.H. Minimal Brain Dysfunction in Children. Toronto: Wiley Interscience, John Wiley and Sons, Inc., 1971.

Wunderlich, R.C. Allergy, Brains, and Children Coping. St. Petersburg, Florida: Johnny Reads, Inc., 1973.

Zentall, S.S. "Optimal Stimulation as Theoretical Basis of Hyperactivity," American Journal of Orthopsychiatry, XLV (July, 1975), 549-63.

APPENDIX I

QUESTIONNAIRE

I. Name _____

Address _____

Phone _____

Date of Birth _____

Relationship to Subject _____

II. Educational Background

What was the last school you attended?
What schools did you attend before that?
What kind of student were you?
Did you experience any problems?
If so, what kinds of problems were they?

Individual Personality

How would you describe yourself as an individual?
What kind of character traits do you feel you have?
How do you feel you react in crises, stress?

Socio-economic

How would you describe your social life?
Do you describe your economic status as:
- Lower Income
- Lower Middle Income
- Middle Income
- Upper Middle Income
- Upper Income

What is your occupation?

III. Parental Background

Education

What is your mother's education?
What is your father's education?
Did either of your parents experience any problems?
If so, what were they?

APPENDIX I

(continued)

III. Parental Background (cont.)

Personality

How would you describe your mother as a person?
How would you describe your father as a person?
What kind of character traits do you feel your mother had?
What kind of character traits do you feel your father had?
How did your mother react to crises, stress?
How did your father react to crises, stress?

Allergies

Do you, or does anyone in your family, have an allergy?

Siblings

Did you have any brothers or sisters?
Brothers.
Sisters.
What were their educational backgrounds?
Did they experience any problems?
If so, what were they?
What are they doing today?

Family Upbringing

How would you describe your upbringing?
Describe the style of discipline.
How would you describe the relationships in your family?
How close do you consider yourself to your family today?

Socio-economic

How would you describe your parents' economic situation as you were being raised as a child?
How would you describe their social life?
What did your parents do for a living?

APPENDIX I

(continued)

How do the following apply to you?

A = Never
B = Rarely
C = Sometimes
D = Frequently
E = Always

	A	B	C	D	E
1. When people talk to me, I find myself distracted by the sights and sound around me.	___	___	___	___	___
2. When I read, it is easy to block out everything but the book.	___	___	___	___	___
3. It is easy for me to direct my attention and focus narrowly on something.	___	___	___	___	___
4. It is easy for me to keep sights and sound from interfering with something I am watching or listening to.	___	___	___	___	___
5. In a room filled with children or out on a playing field, I know what everyone else is doing.	___	___	___	___	___
6. I talk(ed) a lot in class when I was (am) in school.	___	___	___	___	___
7. I enjoy intellectual competition with others.	___	___	___	___	___
8. I am socially outgoing.	___	___	___	___	___
9. I have difficulty waiting for good things to happen.	___	___	___	___	___
10. I am always on the go.	___	___	___	___	___

APPENDIX II

TEST OF ATTENTIONAL AND INTERPERSONAL STYLE

Robert M. Nideffer, Ph.D.

INSTRUCTIONS

USE NO. 2 PENCIL DO NOT WRITE ON THE TEST BOOKLET

Read each item carefully and then answer according to the frequency with which it describes you or your behavior. For example, item 1 is "When people talk to me, I find myself distracted by the sights and sounds around me."

A = NEVER
B = RARELY
C = SOMETIMES
D = FREQUENTLY
E = ALWAYS

If your answer to the first item is SOMETIMES, you would mark with a No. 2 pencil under C for item number 1. The same key is used for every item, thus each time you mark an A you are indicating NEVER, etc.

1. Please be sure to mark your name in the spaces provided at the right of the answer sheet.
2. Fill in your date of birth in the spaces provided at the bottom of the answer sheet.
3. Indicate your sex in the space provided.
4. At the bottom of the answer sheet under Grade, please indicate the number of years of schooling you have completed.

Distributed by:

Behavioral Research Applications Group, Inc.

19 CAMBRIDGE ST.
ROCHESTER, NEW YORK 14607

75 PERKELL PLACE
KITCHENER, ONTARIO

APPENDIX II
(continued)

1. When people talk to me I find myself distracted by the sights and sounds around me.
2. When people talk to me I find myself distracted by my own thoughts and ideas.
3. All I need is a little information and I can come up with a large number of ideas.
4. My thoughts are limited to the objects and people in my immediate surroundings.
5. I need to have all the information before I say or do anything.
6. The work I do is focused and narrow, proceeding in a logical fashion.
7. I run back and forth from task to task.
8. I seem to work in "fits and starts" or "bits and pieces".
9. The work I do involves a wide variety of seemingly unrelated material and ideas.
10. My thoughts and associations come so rapidly I can't keep up with them.
11. The world seems to be a booming buzzing brilliant flash of color and confusion.
12. When I make a mistake it is because I did not wait to get all of the information.
13. When I make a mistake it is because I waited too long and got too much information.
14. When I read it is easy to block out everything but the book.
15. I focus on one small part of what a person says and miss the total message.
16. In school I failed to wait for the teachers' instructions.
17. I have difficulty clearing my mind of a single thought or idea.
18. I think about one thing at a time.
19. I get caught up in my thoughts and become oblivious to what is going on around me.
20. I theorize and philosophize.
21. I enjoy quiet, thoughtful times.
22. I would rather be feeling and experiencing the world than my own thoughts.
23. My environment is exciting and keeps me involved.
24. My interests are broader than most people's.
25. My interests are narrower than most people's.
26. It is easy for me to direct my attention and focus narrowly on something.

APPENDIX II
(continued)

27. It is easy for me to focus on a number of things at the same time.

28. It is easy for me to keep thoughts from interfering with something I am watching or listening to.

29. It is easy for me to keep sights and sounds from interfering with my thoughts.

30. Happenings or objects grab my attention.

31. It is easy for me to keep my mind on a single thought or idea.

32. I am good at picking a voice or instrument out of a piece of music that I am listening to.

33. With so much going on around me, it's difficult for me to think about anything for any length of time.

34. I am good at quickly analyzing complex situations around me, such as how a play is developing in football or which of four or five kids started a fight.

35. At stores I am faced with so many choices I can't make up my mind.

36. I spend a great deal of my time thinking about all kinds of ideas I have.

37. I figure out how to respond to others by imagining myself in their situation.

38. In school I would become distracted and didn't stick to the subject.

39. When I get anxious or nervous my attention becomes narrow and I fail to see important things that are going on around me.

40. Even though I am not hungry, if something I like is placed in front of me, I'll eat it.

41. I am more of a doing kind of person than a thinking one.

42. In a room filled with children or out on a playing field, I know what everyone is doing.

43. It is easy for me to keep my mind on a single sight or sound.

44. I am good at rapidly scanning crowds and picking out a particular person or face.

45. I have difficulty shifting back and forth from one conversation to another.

46. I get confused trying to watch activities such as a football game or circus where a number of things are happening at the same time.

47. I have so many things on my mind that I become confused and forgetful.

48. On essay tests my answers are (were) too narrow and don't cover the topic.

49. It is easy for me to forget about problems by watching a good movie or by listening t music.

APPENDIX II
(continued)

50. I can't resist temptation when it is right in front of me.

51. In games I make mistakes because I am watching what one person does and forge about the others.

52. I can plan several moves ahead in complicated games like bridge and chess.

53. In school I was not a "thinker".

54. In a roomful of people I can keep track of several conversations at the same time.

55. I have difficulty telling how others feel by watching them and listening to them talk.

56. People have to repeat things to me because I become distracted by irrelevant sights o sounds around me.

57. I make mistakes because I try to do too many things at once.

58. I am good at analyzing situations and predicting in advance what others will do.

59. On essay tests my answers are (were) too broad, bringing in irrelevant information.

60. People fool me because I don't bother to analyze the things that they say; I take them a face value.

61. I would much rather be doing something than just sitting around thinking.

62. I make mistakes because my thoughts get stuck on one idea or feeling.

63. I am constantly analyzing people and situations.

64. I get confused at busy intersections.

65. I am good at glancing at a large area and quickly picking out several objects, such as i those hidden figure drawings in children's magazines.

66. I get anxious and block out everything on tests.

67. Even when I am involved in a game or sport, my mind is going a mile a minute.

68. I can figure out how to respond to others just by looking at them.

69. I have a tendency to get involved in a conversation and forget important things like pot on the stove, or like leaving the motor running on the car.

70. It is easy for me to bring together ideas from a number of different areas.

71. Sometimes lights and sounds come at me so rapidly they make me lightheaded or dizzy

72. People have to repeat things because I get distracted by my own irrelevant thoughts.

APPENDIX II

(continued)

73. People pull the wool over my eyes because I fail to see when they are obviously kidding by looking at the way they are smiling or listening to their joking tone.

74. I can spend a lot of time just looking at things with my mind almost a complete blank except for reflecting the things that I see.

75. I sometimes confuse others because I tell them too many things at once.

76. I engage in physical activity.

77. People describe me as serious.

78. I sit alone listening to music.

79. People take advantage of me.

80. I keep my thoughts to myself.

81. I keep my feelings to myself.

82. I am good at getting my own way.

83. I like to argue.

84. Others see me as a loner.

85. I talked a lot in class when I was in school.

86. I enjoy intellectual competition with others.

87. I enjoy individual athletic competition.

88. I compete(d) athletically.

89. I physically express my feelings of affection.

90. I compete with myself intellectually.

91. I compete with myself physically.

92. I enjoy activities with danger or an element of the unknown in them.

93. I express my opinions on issues.

94. I can keep a secret.

95. When I believe deeply in something I find I am a poor loser and unable to compromis

96. I am socially self-confident when interacting with those who are like myself.

97. I am socially self-confident when interacting with authority figures.

98. I am socially self-confident when talking in front of large groups.

99. I am socially self-confident when talking with the opposite sex.

100. I express my anger.

101. I dated in high school.

102. People think I am a clown.

103. I get mad and express it.

104. I get down on myself.

105. I was one of the smartest kids in school.

106. I am a good person.

107. My feelings are intense.

108. I need to help others.

109. I need to be liked.

110. I enjoy planning for the future.

111. I wish I lived in a different time.

112. I feel guilty.

113. I feel ashamed.

114. I am seen as a cold person by others.

115. I am a good mixer.

116. I am socially outgoing.

117. I have difficulty waiting for good things to happen.

118. I peeked at Christmas time.

119. When I am angry I lose control and say things that sometimes hurt others.

120. I have been angry enough that I physically hurt someone.

121. At dances or parties I find a corner and avoid the limelight.

122. I acted in dramatic productions in high school and/or college.

123. In school the kids I hung around with were athletes.

124. In school the kids I hung around with were intellectuals.

125. In school the kids I hung around with were popular.

126. In school the kids I hung around with were outcasts or loners.

127. People trust me with their secrets.

128. I am in control in interpersonal situations.

129. I fought in school.

130. I have used illegal drugs.

131. In groups I am one of the leaders.

132. People admire me for my intellect.

133. People admire me for my physical ability.

134. People admire me for my concern for others.

135. People admire me for my social status.

136. I ran for class offices in school.

137. I feel as though I am a burden to others.

138. People see me as an angry person.

139. I see myself as an angry person.

140. I have a lot of energy for my age.

141. I am always on the go.

142. I cut school in high school.

143. I have engaged in activities that could get me in trouble with the police.

144. I guess you could call me a poor loser.

APPENDIX III

PARENT PARTICIPATION AGREEMENT

During 1978-79, a research study involving students who have attended Toronto Learning Centre will be conducted. The major thrust of this study will be to gather data on students who have been responsive to Ritalin medication. This information will be used statistically to determine whether or not there may be a significant incidence of learning problems within families of learning disabled children.

The following points are made to clarify the conditions of your participation:

1. Participants in the study will be anonymous in the statistical analysis. Names will be coded so that only the interviewer will be aware of the participants' real identities. Final data will be made available on request.

2. Information will be gathered via interview and questionnaire. It is expected that it will be gathered in one interview; however, you may be called upon again for clarification at another point.

3. Questions will deal with attentional and interpersonal styles of all family members of the immediate family and, if possible, grandparents, aunts, uncles or cousins.

continued.....

APPENDIX III

(continued)

Your signature below will indicate that you have read Martin Kravitz's letter concerning the study and the importance of it. You are agreeing to cooperate under your own free will and do not feel coerced into participating.

_____

APPENDIX IV

TORONTO LEARNING CENTRE
PARTICIPATION AGREEMENT

During 1978-79, a research study conducted by Kathlene Willing involving students who have attended the Centre from 1976-77 and 1977-78 will be conducted. The major thrust of the study will be to gather data on those students' family backgrounds who have been responsive to Ritalin medication, in order to determine whether or not there are any possible relationships of familial tendencies to their learning disability.

Having a vested interest in the conclusions of the study, the Centre is allowing the use of the students' files to determine and select those who are responsive, hyperactive, hypoactive, and eligible for the study. In return for the use of the students' files and their support, data analysis and ongoing information, the Centre will have access to the final information after the thesis committee to use for whatever purposes it deems necessary.

The Centre will support the principal investigator in her attempts to contact parents and to interview them for data collection. The following points are provided to clarify conditions of participation:

continued.....

APPENDIX IV
(continued)

1. Data collection is for research purposes only; it is in no way an evaluation of the Centre.

2. Anonymity of all participants in the study is guaranteed. Subjects in the study will be given coded numbers and final reporting will be in terms of group comparison data.

3. Ongoing information as well as the final data will be available to the Centre. Any publication of final data will give credit to the Centre.

ON PROTECTION OF SUBJECTS' RIGHTS

The procedures indicated will be followed to insure the rights of all participants in this study.

1. Students' families will be guaranteed anonymity in the analysis and reporting of data. They will be given coded numbers.

2. All data gathered will be kept in strictest confidence and no unusual information which might be found will be of interest or concern to this study and will not be repeated in any form.

3. Participants will be informed that the study is interested only in analyzing certain learning patterns which other family members may have or had

continued.....

APPENDIX IV
(continued)

which might have some significance in determining familial tendencies.

4. During the initial interview, the participants will also be informed that while their participation is desirable, they need not feel coerced or intimidated into participating. If they wish to change their minds and not participate, they may do so without fear of reprisal.

5. Primarily, the data collected and analyzed during the course of the study will be used as material for the investigator's Master's Thesis. Information will be made available to her, the Centre, and members of the investigator's Thesis Committee at Lake Erie College. The group data and descriptive analysis, results and interpretations will be reported as a major part of the project.

6. All participants in the study who are involved in the final data will be allowed the final results if requested.

The following have read the investigator's proposal and are willing to participate in this endeavour.

_____

Martin Kravitz, Director

APPENDIX V

Behavioral
Research
Applications
Group Inc.

19 Cambridge Street • Rochester, N.Y. 14607 (716) 442-5861

January 9, 1980

Kathlene R. Willing
470 Oriole Parkway
Toronto, Ontario
Canada

Dear Ms. Willing:

You have permission to use for your thesis, the Table on the Test of Attentional Style Scales from the TAIS manual.

Best wishes with your thesis.

Sincerely,

A. O. Dick
President

HUMAN FACTORS • HUMAN PERFORMANCE • TRAINING • MANAGEMENT CONSULTING • SERVING GOVERNMENT AND INDUSTRY

AOD/eas